INTERNATIONAL HELLENIC UNIVERSITY

Consumer willingness and behavior for packaging and recyclability

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ABSTRACT

This dissertation was written as part of the MSc in Strategic Product Design at the International Hellenic University.

An increase in the amount of consuming packaging has put pressure on companies to take responsibility for the entire life-cycle of their product. This research project focused on factors affecting consumers' willingness and behavior for packaging and recyclability. Specifically, the project focused on the sustainability of packaging and attempted to find if an eco- friendly package affected a consumer's decision to purchase that product. The specific question asked was: "Are consumers willing to buy a product based on how environment-friendly of its package is even if it has a higher price point than competing products, or if it goes against the consumer's brand desire?" Research data was gathered throughout a multi-page survey comprised of sixteen questions of varying complexity. Participants were primarily aged 18-50^{+}. It was found that participants seem to care a lot about the environment, although they tend to choose products based on price, quality, and brand rather than sustainability.

The results of this study suggest that if people are informed more about environmental issues and how can be added to their daily life, probably will interest more to buy products with more sustainable packaging. In addition, companies have to try to not overprice a product due to their packaging material and the process that has been through.

Keywords: consumer behavior, recyclability, environment, packaging

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CHAPTER ONE: INTRODUCTION

Over the last decades, an increasing implication has been over safe disposal of waste, global warming, and the renewability of sources. “Sustainability Movement” or “Green Movement” has become known as the main concerns. A combination of federal requirements and consumer significance has motivated many organizations to research this movement and prompted some of them to modify their business strategies. Most businesses understand the traditional methods of convincing consumers to buy their product (brand recognition, price, the attractiveness of package design, shelf placement, etc.) but perhaps do not see the potential of sustainability as an influencer. When consumer’s interest in “green” movement and sustainability ignored by the companies, they might not capture as much of the market as they could

In Greece, as well as many other countries, post-consumer recycling is used to conserve resources and reduce waste. On such recycling programs, much of the success depends on consumers categorizing their waste and choosing whether to send a used packaging item to a recycling facility, landfill, or a composting facility (where available). With the increasing complexity of post-consumer waste management systems, it is becoming more difficult for the average Greek consumer to know what to do with all the waste that they and their households are generating. Regarding packaging waste, the most eco-friendly way to recover resources has proven to be recycling when compared to other options such as waste to energy and landfill.

For this reason, businesses started to use environmental techniques and produce environment- friendly products, which are supposed to be appropriate for people, nature and companies’ reputation on the market. Companies, to separate green products from typical ones, put special designed Eco-labels on them. Products that have less impact on the environment than non- labeled goods and also meets high environmental and overall performance concern can be certified by an eco-label logo. Beyond, this environmental point of view, it also shows that a business takes care and invest in people and be socially active. One of the first labels which had an ecological propose was the European Ecolabel. At.1992, in order business start produce products and services which are eco-friendly, EU persuade companies to stamp their products and

services with a flower logo, so consumers can recognize them easily (Mdh.diva-portal.org, 2018)

Green buying is a term which refers when a consumer purchase or consume products that are beneficial for the environment (Mainieri et al., 2001). The way that an independent consumer or a group of them, use and regulate services according to their preferences and needs called Consumer Buying Behavior. These preferences vary in different people characteristics,situations, and cultures. Although, green consumers can be considered consumers whose buying behavior is influenced by environmental interest. In addition,age, values, attitudes, and income are some main differences between green buying behavior and general buying behavior (McCarty et al., 1995).

Also, the strategic application of reverse supply chain logistics ore reverses logistics to improve the reclamation of goods at the end of their useful life had gained increased attention. The environmental implication of reclamation, reuse, and recycling to save landfill space, energy, and costs are essential for the organization (Sarkis, Helms and Hervani, 2010). In addition, reverse logistics is growing in importance as governmental regulations force firms to take back their products. There are also benefits using returned goods in the production procedure and growing interest in consumer recycling.

Significance of the resource

With pressure from both governments and consumers to adopt sustainable business strategies, it could be in the social interest of product producers to market sustainability along product features. This project is intended to find out if producers can increase profits and expand their customer base by advertising sustainability and gauge consumer interest in the environment. It might serve as a reference for any organization interested in marketing or advertising their current sustainability efforts to people.

Brief results

Based on the results that presented on Chapter Four, there were not many consumers willing to purchase a product based on the environmental friendliness of its package even if it has a higher price than competing products or if it went against their brand preference. Price, brand, and quality, appear to be far more essential to consumers than any other element. It was not so clear whether the price would be as important if the

economy were more stable; it would be interesting to repeat this study under better economic circumstances.

CHAPTER TWO: LITERATURE REVIEW

In Greece, post-consumer recycling is used to reduce waste and preserve resources. Much of the success of such recycling programs depends on consumers sorting their waste and choosing whether to send a used package item to landfill or a recycling facility.

2.1 Packaging Logistics

From the business point of view, packaging logistics is becoming a critical aspect of the transportation of products from one point to another. Product packaging should be realized in a way so that movement of goods between incoming transport, storage, processes and outgoing transport should be easy and flexible. Also, a well-designed packaging and packaging system improves the profitability, reduces the cost by eliminating product damages, facilitates more comfortable handling and better resource utilization, while increases revenue generation through customer fascination and satisfaction from an advertising and marketing point of view. Furthermore, from an efficiency point of view packaging is described as a "techno-economic feature aimed at minimizing expenses of transport at the same time as maximizing sales (and hence profit). (Paine, 1985)

Throughout the years, a lot of research work has been realized to identify innovative packaging solutions for efficient logistics. The concept of packaging logistics is frequently delimited to packaging, focusing either on technological factors such as packaging features or marketing factors such as branding and design. In addition, most of these researchers concentrate on the product itself and tend to overlook the global role of packaging. Due to marketing, packaging and logistics diversification, the selection of a new optimized packaging design solution, and consequently the development of an efficient system, has always been a relatively complex and challenging process. The selected optimization proposal need to satisfy at the same time a number of different criteria. In order to meet user requirements, researchers should provide a relevant and meaningful summary of the current condition of this field.

As a significant sub-system, packaging can play a vital role in satisfying supply chain needs, since it may be adapted to the product on the one hand and the supply chain on the other. In addition, researchers have to focus on two main ideas; the first one is that the concept of packaging, is a value-adding process in the supply chain, meeting the customer demands by considering the packaging system in a various logistics processes. Although, they should not forget to be adequately sensitive to detect and capture slight variations or changes in the thematic area they study. This issue has been studied by Sohrabpour (2012), who analyzed the role of packaging in the effectiveness and efficiency of supply chain and how the lack of supply chain-focused packaging design can be a significant problem for packaging development engineers.

2.2 Packaging Waste

In the 1980s, began the first packaging recycling efforts in the EU, and associated with beverage containers and especially the bottles of beer. There has been no standard EU legislation packaging, and every Member state implemented its personal guidelines for recycling. The attempt to integrate countrywide systems started when cheap recycled materials from countries that had financed packaging collection and recycling structures took place in countries in which recycling was primarily based only on recovering materials costs without extra investment. At this point, in those countries, recycling systems had been threatened with failure (Eoan.gr, 2017).

On packaging and packaging waste, the legislation 94/62 / EC established the overall standards of the European Union. This directive was incorporated into national regulation through regulation 9268/469/2007 which lays down recycling goals per waste stream and introduces the obligatory participation of the parties responsible (packaging manufacturers) in alternative waste control systems (Eoan.gr, 2017).

The packaging waste regulation in Greece obligates any organization handling packaging on an industrial basis to take responsibility for the gathering and recovery of packaging waste. Responsible for the management and administration implementation of "alternative management" of packaging waste is the Hellenic Recycling Organization (HRO).

Placing nationwide blue bins is the most common packaging waste recycling system in Greece. However, there are different and alternative systems as well that take place in

Greece. Some of them are small recycling kiosks; another recycling waste oils packaging and a system created solely for the supermarket AB Vasilopoulos. Plastic, glass, aluminum, paper and cardboard, tinplate and wood are some of the materials that recycled (Eoan.gr, 2017).

The quantitative goals for packaging waste require that through the end of 2012, the percentage of packaging waste to be recycled through weight have to be among 55% and 80%, as described in law 9268/469/07. In addition, the goal of recovery or incineration is 60% minimum through the weight of packaging waste. Figure 1 illustrates the goals per material (Eoan.gr, 2017):

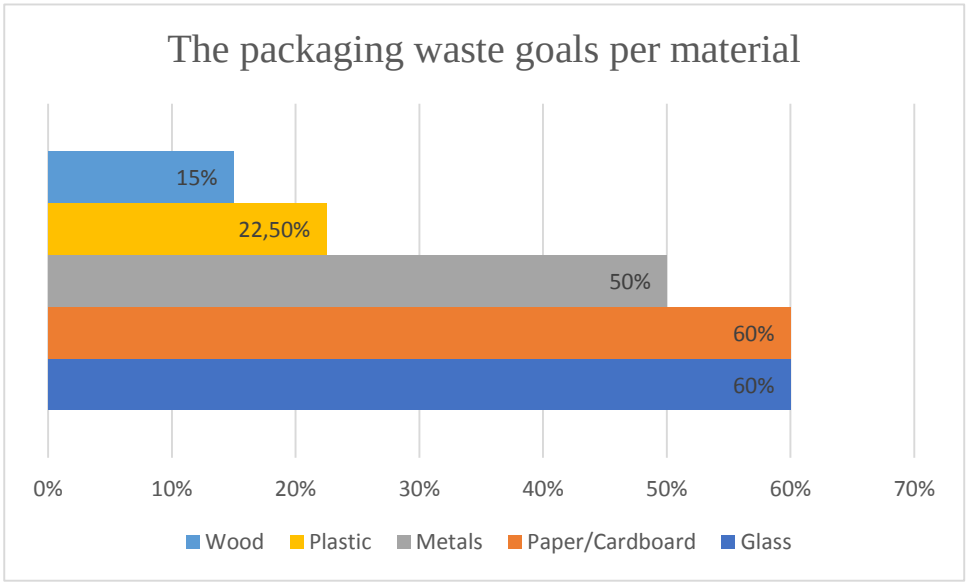

Figure 1: The packaging waste goals per material

The Alternative Waste Management System Packaging SSED-RECYCLING began its operation in 2003 through placing blue recycling bins. A steady increase in the geographical range, the wide variety of contracted manufacturers and the quantity of packaging recycled has been shown at the packaging recycling process.

2.2.1 Alternative Waste Management System

Nowadays, three (3) collective and one (1) individual alternative management systems were obtained for packaging and packaging waste. The approval for one of these, especially "ANTAPODOTIKI ANAKYKLOSI SA" has been revoked through the Board of the HRA (Law No. 380/12.04.2012) (Eoan.gr, 2017).

The Supreme Court through Decision 2480/2014 established the application of this AWMS, leading to the partial annulment of the above Decision taken through the Board of the Hellenic Recycling Corporation and demanded that the decision is taken with the aid of the state administration in step with its reasoning (Eoan.gr, 2017).

i. "S.S.E.D.- Recycling" of HERRCO SA.

The Collective Alternative Management System Packaging has been authorized by the law 106453/2003. The produces owned the 65% of the share capital of the system (through the business enterprise "Packaging Materials Holdings SA"), the other 35% belongs to the Local Authorities. Nowadays, 1.651 companies collaborate with the Collective Alternative System. Most people of financial improvement appear from the beverages, food and soft drinks industry.

The Hellenic Recycling Agency explains that this collective system is operated national, and its scope concerns non-dangerous waste packaging. It has to be noticed that, even there is no legal obligation, printed paper is also recycled in the blue containers. The primary action is the improvement of blue bins in which packaging wastes are deposited. Moreover, the system implements particular movements, contribute the collected business-commercial packaging waste and holds an inventory.

Four categories of activities had been evolved for recyclable packaging:

1) The organization in cooperation with local authorities funded and developed a network of blue bins for the recycling of packaging waste coming from demotic waste. In order people to approach the packaging waste collection, they have to deposit their garbages in the special designed blue bins. Glass or soft drinks, cans of beer and plastic bottles of water, detergents, food, or soft drinks, tinplate packaging milk or cans, and cartons of miscellaneous products are some of the marks that packaging concerning system has outside of the blue bins. At various points in developed areas, blue bins have been placed, and most of this places have been selected by the local authorities.
2) Financial incentives have been provided by companies to operate the collection of packaging waste, which originates from the Commercial and Industrial Packaging Waste sector for recycling/recovery.

3) Individual Actions aimed at collecting and recycling packaging waste from large producers and professional activities areas, e.g., hotels, beaches, restaurants, etc., emphasizing on containers made of plastic or glass.

4) Agreements with municipal or other bodies (e.g., the Union of Communities and Municipalities of the Region near Attica- ESDKNA) (Eoan.gr, 2017).

ii. Keped SA

Ministerial Decision No. 105857/2003, which is effective in the alternative management of lubricant oils packaging in Greece, approved KEPED SA. By the end of 2010, 170 companies had contracted with KEPED, which approximately represent the 95% of lubricants market.

Collection of paper and plastic packaging, through individual bins, placed most of the times in areas near service stations and garages. On the other hand, metal and wooden lubricants are collected in cooperation with contractors. Also, there are special containers of 10-35 m^3 placed near industrial regions.

The System participates in many exhibitions, schedules campaigns for school, workshops and radio interviews in order to inform the general public and the parties' responsible-managers. 40 counties in Greece and approximately 1.100 productions points are operated with the System (Eoan.gr, 2017).

iii. "Antapodotiki Anakyklosi"

ANTAPODOTIKI ANAKYKLOSI started in 2009 and had been approved by the legislation 193471/2008, and complementary operated in the alternative management of packaging waste nationwide. In order to offer a rewarding motivation to the consumers, the System intends to establish equivalent recycling units using reverse sales packaging machinery of plastic, metal, glass packaging and paper-cardboard. Citizens can use the recuperated money directly or offer for a charitable purpose. Moreover, System holds an inventory of industrial - commercial packaging waste collected and implements specific actions for this. 86 of such centers have been installed where packaging waste collected, by the end of 2010, in various regions of Greece (Eoan.gr, 2017).

iv. Individual Alternative Management System of AB Vasilopoulos' SA Private Label Packaging

Ministerial Decision No, 106156/2004 approve the AB Vasilopoulos' project about packaging management system of Private Label products. The customers return reusable metal, glass, multi-use packs, plastic and paper packaging for recycling in the company's supermarket stores Machinery of Reverse Sale (Recycling Centres). When consumers participate in this project gets offers or a deposit tariff, which is the reward fee for a social purpose.

2.3 Reverse Logistics

All actions associated with the reuse of materials and products are connected with reverse logistics. It is the procedure of planning, implementing, and controlling the efficient, cost-effective flow of raw materials, in-process inventory, finished goods and associated data from the point of consumption to the point of starting place to recapture value or proper disposal. Specifically, reverse logistics is the technique of transferring goods from their ordinary final destination for the reason of capturing value or right disposal. (Transportation Management Company | Cerasis, 2017)

Within the definition of reverse logistics can be added the refurbishing and remanufacturing processes. The demand and the control of returned machinery from the hardware leasing enterprise as well as surplus consist of the procedure of reverse logistics. Usually, logistics bring the products closer to the client, although, when the means go at least one step back in the supply chain, reverse logistics take place. For example, goods pass from the consumer to the distributor or the producer.

When a manufacturer's product typically moves via the supply chain network, it is to reach the distributor or consumer. Any procedure or management after the sale of the product includes reverse logistics. If the product is defective, the customer will return the product. The manufacturing firm would then have to organize shipping of the defective product, testing the product, recycling, repairing or disposing of the good. The product would travel in reverse via the supply chain network to be able to retain any use of the faulty item. The logistics for such cases is reverse logistics (Transportation Management Company | Cerasis, 2017).

However, reverse logistics as a research area is entirely new; plenty of examples show us that have been around for a very long time. Some of them are the waste paper recycling, metal scrap brokers, deposit systems for soft drinks and the reuse of products and materials.

A body of know-how begins to be developed around the reverse logistics area which only appeared approximately within the last two decades. To be more specific, through the last decade, reverse logistics achieve recognition either as a research area or as a practice. Many companies have not fully realized the importance of reverse logistics, although this process has been gaining more and more attention recent years.

2.3.1 Traditional Logistics Flow Vs. Reverse Logistics Flow

For reference, the traditional logistics flow is described by the Council of Supply Chain Management Professionals glossary, as:

"The action of controlling, implementing, and planning the efficient, cost-effective flow of raw materials, in-process inventory, related information and finished goods from the point of origin to the point of consumption to conform to customer requirements (Cscmp.org, 2017).

The same glossary defines reverse logistics as:

"The action of controlling, implementing, and planning the efficient, cost-effective flow of raw materials, in-process inventory, related information and finished goods from the point of consumption to the point of origin to recapture proper disposal or value (Cscmp.org, 2017).

Reverse logistics is entirely different from the traditional logistics, or forward logistics, activities. Figure 2 illustrates the differences between these two terms.

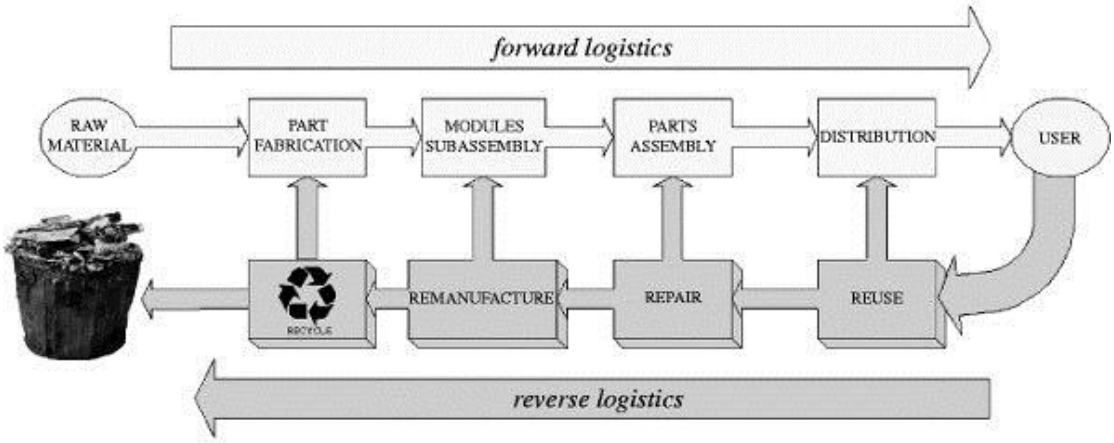

Figure 2: Traditional and Reverse logistics flow

2.3.2 Important Benefits Of A Sustainable Reverse Logistics Strategy

Business owners face countless decisions throughout all aspects of the supply chain. Organizations need to determine which routes to use, where to manufacture products, and whether or not to cooperate with a third party logistics company. However, one of the most crucial aspects of supply chain strategies is often unnoticed: the reverse supply chain (additionally known as reverse logistics). Reverse logistics within the supply chain revolves around managing end-of-life, malfunctioning, or hardware improvements. A reverse logistics approach provides a path for getting rid of the existing equipment to make way for the following era of equipment in the case of the end of life products or new improvements. In a sense, reverse logistics can be ch characterized as the "greenest" part of any business logistics method. The following key point will help you understand how reverse logistics strategy affects supply chain strategy.

Return on investment

When a commercial enterprise, or other organization, purchases equipment, parts, or remanufactured equipment can be characterized as an investment. Through the years, this equipment improves profitability and has a valid return on investment. While the time comes to put off this equipment, business owners can employ reverse logistics

practices to achieve a second return on investment from the equipment. Many computers and different electronics contain high levels of metals, like copper, iron, or metal, which can be sold for reuse in new gadgets (Transportation Management Company | Cerasis, 2018). Alternatively, an automotive piece of equipment may be remanufactured giving life to the equipment, allowing it to be reused or resold. This is part of the recycling technique, but for our purposes, we identify this as reuse because of the profits generated with the aid of it (Transportation Management Company | Cerasis, 2017).

Increase in public approach

People have grown to accept and embrace protecting the environment as a key value and need of modernity. Environmentally-friendly organizations routinely see an increase in consumer satisfaction and public belief, even though it started out as a few simple activists decades ago (Transportation Management Company | Cerasis, 2017).

For instance, a single business who focus on reuse and recycling can take advantages of the mass-following of the Green Movement. The harmful nature of filling landfills with thousands and thousands of toxic and dangerous items have been seen by the people, and for this reason, people want to know that each organization is doing the very best to promote to future generations a safe environment.

Through setting an example for others, a business who recycles their end-of-life goods embraces the wants of the public. In the end, this outcome in a stronger, more loyal consumer base, higher new consumer acquisition rates, and increased confidence from the public (Transportation Management Company | Cerasis, 2017).

Competition in manufacturing inspire reuse

At some point in the supply chain, companies compete with one another for an extra share of the marketplace. This is automatically an effective occurrence and facilitates maintain the costs of products affordable. Although, diminishing natural resources, as well as the resources necessary for the manufacturing of artificial materials, are affecting the supply chain. Every non-recycled electron consists of goods that would have been repurposed and reused in new merchandise and electronics. With much less recycled materials, the existing pool of natural sources will continue to decrease, on the way to result in higher charges because the demand for electronics grows. In the end, a business engaged in recycling of end-of-life computer systems and device as a part of

reverse logistics approach has taken steps to help maintain their costs less. Moreover, decreased business costs translate into financial savings for the organization and lower prices of their goods and services. Consequently, lower costs inspire more customers to buy an enterprise's products, which facilitates grow the particular organization (Transportation Management Company | Cerasis, 2017).

Business reduce risks

A successful reverse logistics approach need to contain the techniques to make sure the safety of data. Data breaches might not sound as though they have got a particular relation to sustainability. However, an organization's sustainability is measured using its ability to maintain satisfied clients at the same time as decreasing the impact in the world. When a data breach occurs, it can decimate an organization's consumer base. Unfortunately, a failing organization is much more likely to overlook about recycling as a part of IT Asset Disposal, and the business's level of sustainability hesitates. Moreover, recycling as part of reverse logistics approach allows making sure the company's current data on their equipment is eliminated in its entirety, which also reduces the risk to the enterprise. Ultimately, proper return management, recycling, and reuse inspire the safety of customer data and foster business success and sustainability (Transportation Management Company | Cerasis, 2017).

Through the process of business, a sustainable plan for dealing with recalls, equipment failures, remanufacturing, or end-of-life equipment will need to be created by business owners. The methods of recycling items from this equipment assist reinforce companies by way of providing a further source of profits from the sale of the items throughout recycling, improving the general public perception of the organization, and decreasing the risks of data breaches. Sustainable reverse logistics strategies provide such a lot of additional, smaller benefits that they can't probably be listed, including eliminating fines from government organization from incorrect disposal, however the overwhelming monetary advantages of applying a reverse logistics strategy far outweigh the charges of actually tossing old equipment right into a landfill (Transportation Management Company | Cerasis, 2017).

2.3.3 Producers' Obligations

Packaging handlers are obliged either organize individual structures or take part in collective alternative control systems. According to the regulation, the economic contribution to collective alternative packaging management system is due to be paid through the package maker and the importer of finished goods. The exporter shall not be accountable.

The above method is applied to imported packaging as well, in order to avoid discrimination. Participation in a collective alternative management system should be accompanied by the payment of a monetary contribution on behalf of the manufacturers to cover the price of alternative management (Eoan.gr, 2017).

It has to be further mentioned that in the case of a collective system, the participation of manufacturers who fulfill the terms and conditions of the system has to be ensured. These terms are decided in the accession contracts to the system. The systems must also make sure the possibility of establishing cooperation agreements with parties responsible for municipal waste control.

The installation of any individual or collective alternative control system requires approval with the aid of the Hellenic Recycling organization (HRO). Concluding, the candidate systems submit an application, which needs to meet a set of preferred standards that have been adopted through since 2002 (Eoan.gr, 2017).

2.4 The Term of EPR in Europe

As reported by the Organization for Economic Cooperation and Development definition, Extended Producer Responsibility (EPR) is "an environmental action in which a producer's responsibility for a product is extended to the post-consumer stage of a product's lifecycle" (Oecd.org, 2017).

In practice, EPR means that manufacturers take over the obligation for collecting or taking back used items and for sorting and treating for their eventual recycling. This type of responsibility may be merely financial or organizational as well. This action first appeared in the early 1980s in a few European Member States, mainly for packaging waste, and by then it has continuously spread around the EU (and abroad). EPR should aim at internalizing environmental externalities and have to offer an

incentive for manufacturers to keep in mind environmental concerns along the products' life, from the design phase to their end-of-life. As such, EPR is to be examined as a prime instrument in the help of the implementation of the European Waste Hierarchy, and consequently for the increase of, by priority: prevention, reuse, and recycling (Development of Guidance on Extended Producer Responsibility (EPR), 2014).

Local authorities, retailers, customers-citizens, product-makers, public and private waste control operators, social economy actors and recyclers are all actors who involved in the product value chain, and EPR can inspire a change in the behavior of them. EPR is also identified as a critical instrument in link with resource efficiency and raw materials strategies promoted at EU levels such as the flagship initiative for a resource-efficient Europe under the Europe 2020 strategy and the European Innovation Partnerships (EIP), launched under the European Commission's Innovation Union (Development of Guidance on Extended Producer Responsibility (EPR), 2014).

It is crucial to be aware that European waste law currently gives an international framework for the implementation of EPR in Europe. The Member States and their respective law are responsible for the implementation of EPR, which includes regulating the operational aspects of EPR. The Development of Guidance on Extended Producer Responsibility (EPR) study shows that EPR regulations were designed and implemented in a completely heterogeneous manner across Europe. Regardless of EPR being, in the idea, an individual obligation, in practice manufacturers often exert this obligation collectively. In collective projects, a producer responsibility organization (PRO) is set up to enforce the EPR principle on behalf of all the adhering businesses (the obligated industry). PROs probably exert three significant functions: financing the collection and treatment of the product at the end of its life (focused waste stream) through collecting fees and redistributing the corresponding financial amounts; dealing with the corresponding data; organizing and supervising those activities. Even though this report mainly focusses on pros, private schemes do exist for most waste streams (Development of Guidance on Extended Producer Responsibility (EPR), 2014).

In the last ten years, two main evolutions of EPR have occurred: whereas the initial fees paid by producers represented only a partial contribution to solid waste management costs, the operational costs coverage by producers fees has gradually increased, sometimes reaching 100%; whereas the PROs were initially created as entities whose role was mere to combine the manufacturers financial contribution, their appearance

has been drifting towards more practical interventions and a broader scope of action (data control, setting up operations, launching bids, communication campaigns, and so on.) (Huisman, 2018). Such evolutions have accompanied undeniable enhancements in waste recycling and recovery performances in all MS. despite the fact that, large differences in performances do exist among the Member States. It is also essential to notice that considerable differences regarding the organization of EPR schemes may be located depending on the waste flow (Development of Guidance on Extended Producer Responsibility (EPR), 2014).

2.5 Consumer Behavior

This gap among intentions and actions is the concern of a lot ongoing research and debate. Numerous studies from the 1970s, e.g. (Anderson and Cunningham, 1972) to the present, e.g. (Ringler, 2012) have been undertaken to understand what makes consumers purchase specific products; especially within specific market segments such as 'green consumers.'

During the last two decades, there was an increasing problem with global warming, safe disposal of waste, and the renewability of sources. the push to deal with those issues has ended up referred to as the "green movement" or "Sustainability movement." A large number of people see themselves as "green consumers," but few of them act consistently "green" (Pedersen and Neergaard, 2005). The obstacle is that there is no direct link between the attitudes consumer's express and their actual behavior. Behavioral psychologists have also regarded into the purpose/actions gap in areas consisting of consumer littering and recycling behavior, in which studies have found that when managing these types of problems the gap appears to turn out to be even larger, due to the popular notion of "doing what's right", in this case, people tend to report what they really should be doing and not what they actually doing.

A combination of federal requirements and consumer interest has influenced many organizations to investigate this movement and caused some of them to change their enterprise practices. Most businesses understand the traditional strategies of convincing customers to shop for their product (brand recognition, price, the attractiveness of package design, shelf placement, and many others.)

Organizations might not have a good position in the market as they could, due to the fact that they forget customers' interest in sustainability and the "green" movement.

However, companies do not see the possibility of sustainability as an influencer. Something as easy as moving a post-consumer material seal from the back of a package to the front (in which it may be visible by consumers) could turn a "green-minded" skeptic right into a consumer.

There is no doubt that many customers express concern for the environment and a desire to buy products from businesses that share that issue, however, "concern" does not always translate into real buying behavior. Particularly in the contemporary market, the price is such an effective influence that environmental friendliness might not be something that customers base their choices on in the shop. Regarding plastic packaging, many businesses hesitate to use resins made from post-consumer materials because it does not have the identical quality of appearance as resin made from a new material (Toloken, 2011).

The same problem does not happen with paperboard goods. However, there are plenty of boundaries of how the good-recycled fiber may be used for specific packaging made by paperboard and at the same time will not influence the quality of it. A consumer who places more value on sustainability than price, quality, or appearance is difficult to find, although many companies serving different markets, would probably both agree that advertising sustainability (environmental responsibility, post-consumer material, waste reduction,) can potentially raise brand awareness and attract new customers, Among these circumstances, it is no surprise that sustainability mostly comes in the last place in the order of concern to consumers. The majority of people honestly place more value on price, quality, and appearance of a package, but there is certainly awareness about the importance of recycling and reusing post-consumer waste.

For instance, (Keller, 2013) reported that ''Marketers must choose the aesthetic and functional components of packaging correctly to achieve marketing objectives and meet consumers' needs. Aesthetic considerations govern a package's size and shape, material, color, text, and graphics." How the package appeals to consumers is an essential factor that affects manufacturers' consideration in their choice of packaging.

In brief, today's consumers are not the same as yesterday's consumers. Today's supply of raw materials is not the same as yesterday's supply. The concepts of reusing and recycling are nothing new, but we are now reaching the point where they are not just

politically and environmentally relevant, but becoming economically relevant as well. If a manufacturer can cut costs by using more recycled material and gain an advantage over competitors by advertising this cost-cutting strategy, it is an ideal scenario. The manufacturer has a package that is cheaper to produce, and the customers have an opportunity to buy their conscience and send the message to other manufacturers that sustainability is crucial (Ringler, 2012). Advertising post-consumer recycled material on a paperboard package would influence more consumers to choose that particular product over a competitor's product and the business will have spent less on the package than if it contained no recycled material.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This methodology is to evaluate and understand how consumers react to recycling and if they willing to pay more for sustainable packaging in the Greek market. The purpose of doing this methodology is to help those organizations or even companies that design green packages to urge consumers buy more sustainable products/packages and be more active in this sector. Also, with the help of this survey, service providers can understand customer needs and also to improve old or create new service which is a match to the increasing customer expectation.

3.2 Research Method

Research needs two different kinds of approaches, quantitative or qualitative method (Ghauri and Cateora, 2014). In quantitative research, the participants are asked to answer either orally or writing to some questions which the answers could be multiple choice or as "yes" or "no." The result can sum up with different kind of statistics as average or percentage. In survey research, most of the times the questionnaires are directed via telephone, mail or personal interview and usually related to quantitative research. On the other hand, qualitative research tends to be more unstructured and explorative with open-ended questions. Mainly, focuses on interpretation and understanding the person's thought and feeling (Ghauri and Grønhaug, 2002).
According to the information above, this research paper targets on quantitative method. The choice of this method has been used due to the fact that this research paper has been mainly focused on the evaluation of the data among the sample. For instance, 84 percent of the participants choose product A over product B (Ghauri and Cateora, 2014). In addition, in order to compare the data and analyze them, this technique was used to examine and sum up the outcome in percentage. In this case, it is used a descriptive statistics method, which means that the results have been analyzed on averages or on measures of central tendency.

3.3 Questionnaire

The most popular data collection methods in the business study are questionnaires. There are two kinds of questionnaires: Analytical and descriptive survey. The descriptive survey is concerned with the appropriate characteristics of a specific community. In this survey, in order to choose what kinds of questions are needed in the questionnaire , research on previous literature and studies are essential, in this way it is easy to gain consumers character regarding unique products. On the other hand, analytical survey interest in examining the theory (Ghauri and Grønhaug, 2002).
Based on the previous information, a descriptive questionnaire has been used, in order to analyze how consumers interact with eco-labeled products and everyday products (Appendix A).

At the beginning of this survey, it was decided to do the survey interview. However, it is decided to send the survey via email and social networks, such as Facebook (and with the help of Google Forms). The questionnaire had been answered by 323 people, although it was distributed to five hundred people. The main difficulties that we faced before this decision was reaching people by interviews and the uncomfortable face to face meeting, specifically because of the language barrier. This fact increased the possibility of having more answered questionnaires and saved time. Ages between 15-50^{+} were our target group that performed this survey. The wide range of ages is chosen due to the fact that recyclability and consumer willingness to pay more for a more sustainable package, has nothing to do with the age. Everyone who goes to buy a bottle of milk at the supermarket is responsible for choosing an eco-friendly product, for this reason, we didn't choose to distribute the questionnaire only to young adults (18-29), or adults to be 30-54 years old.

3.4 Choice of Questions

The questions in this dissertation paper are mainly based to understand how the consumers make their choices for buying products which categorized as "green." The theory part, which has been analyzed in the literature review, guide us to make these specific questions. Some of the questions were made to gain information about purchasing decision processes such as why people buy products which their package has environmental character, or how many of them think in a more "green" way or do

they recycle. To be more specific, the questionnaire has been divided into four sections. In the first section, participants had to fulfill their personal information about demographic data (age, gender, level of education, etc.). After that comes the part which had questions about recycling. There, participants answered dichotomous questions as "agree/disagree" or "not at all important/very important." In this way, it could be easier for the sample to establish their opinion. The same thing happened to the other parts of the questionnaire (labeling on packages and consumer willingness). In addition, it has been added multiple choices questions, and in some cases, added photos help participants understand better the question or make them recognize easily some logos.

The choice of questions has been made after a lot of research on how to find the perfect questions for this dissertation and how to structure them correctly. The aim of this questions was to involve participants in this process in the easiest way, help them understand the project and answer accurately the questions and give most precise answers. Our expectations were to get as many questionnaires as we can, in this way our sample will be more accurate.

3.5 Limitation of Research-Methodology

Although, it is tried to cover as many issues and problems as it can, there are also some limitations that can be studied further in future research. First of all, it was impossible to cover all round aspect of our market research. Limited time, people who weren't willing to answer our research paper and a questionnaire which had to be short and at the same time quite descriptive were some of our problems. In addition, due to the fact that many questionnaires sent to college students, which the majority of them seems to be highly educated, came in contrast with the data of Hellenic Statistical Academy. Moreover, this cause as another problem, because as it shows in the chapter four, at the demographic part, the group of people their age are among $36\text{-}50^{+}$ is quite short. Also, it was noticeable that people did not show much of the interest while answering the questionnaire, although it was needed only 5-7 minutes to fill the form.

CHAPTER FOUR: DATA ANALYSIS & DISCUSSION

The design of the choice experiment survey began with a review of the literature and identification of the primary attributes and levels involved in product packaging recycling decisions. In order to find out consumers' relation towards recycling with the emphasis on "green" packaging products, the survey has been carried out. There have been 16 questions, out of which four questions were about demographic data (gender, age, education and city of residence). The survey has been sending to 500 people and has been answered by 323 people, which means that the 64.6% of the people will to answer the questionnaire.

The survey (found in Appendix A) was distributed to each participant in person. Questions were designed to gauge consumer commitment to sustainable packaging and demographic differences in responses to various aspects of consumer behavior regarding recycling and "green" packaging/product, and the findings are presented below. Each and every answer have been answered is enclosed in the following excel file (https://www.dropbox.com/s/deifirwogk7q940/Karamichali_Responses.xlsx?dl=0).

4.1 Demographic Results

The Figures 3, 4, 5 and 6 illustrate the demographic data of this survey, which are very important to understand and study more about the differences of the answers according to gender, age, education and city of residence.

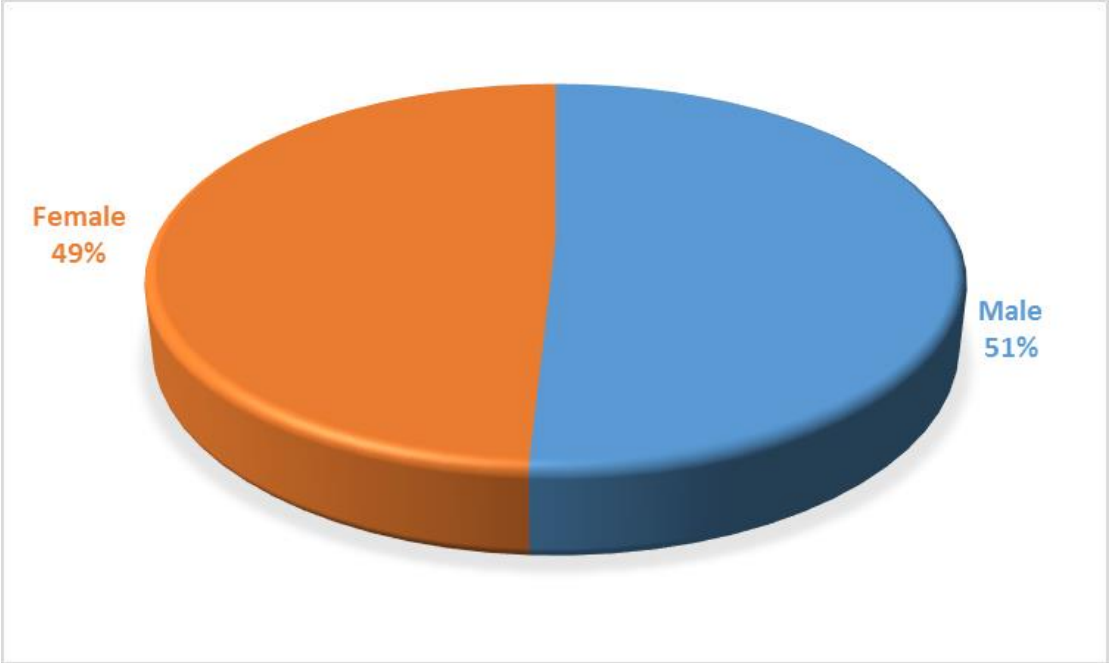

Figure 3: Distribution of responders according to their gender

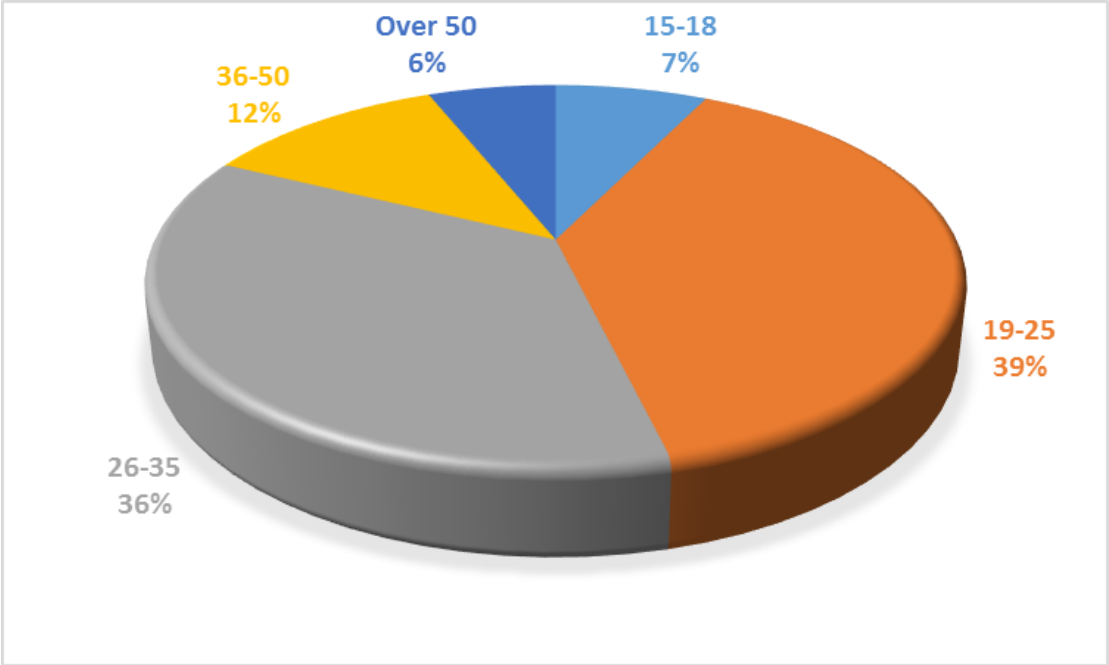

Figure 4: Distribution of responders according to their age

Of the 343 participants, 175 were male, and 168 were female. 25 out of 343 participants were between the ages of 15-18, 134 were between the ages of 19-25 and 124 were between the ages of 26-35. At the ages of 36-50, 40 participants answer the questionnaire, and the rest of the sample was over 50 years old. This data shows that our sample is more focused on the ages among 19-35, due to the fact that the

questionnaire has been answered mainly by college students, which demonstrates a big group of the population. Also, for ages over 50 years old, the sample is quite small and cannot illustrates the opinion on the survey for this specific age group.

After a lot of data analysis and with the help of different commands of Microsoft Excel, various demographic data have been compared, and the results are presented in Appendix B. As illustrated above, 134 participants were between the ages of 19-25 and 71 of them were women. Also, 49% of the people between the ages of 26-35 were men. Also, 11 people out 343 were over 50 years old, 16 of them were women, and 4 were men.

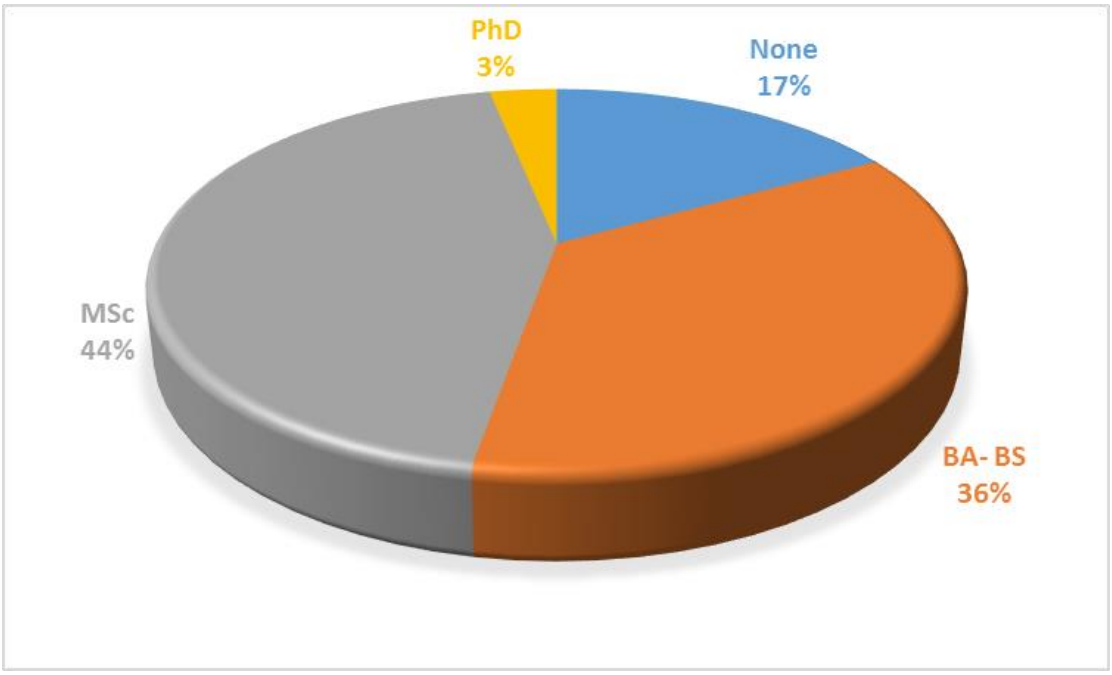

Figure 5: Distribution of responders according to their education

Of the 343 participants, 58 were with the level education of below diploma and 123 were with the level of diploma education. In addition, 151 out of 343 participants were people with an MSc in their CV. Although only 11 of people own a Ph.D. and are highly educated, 5 of them were female. Moreover, 57.7% of the participants that were with the level of diploma education were men, and only the 9.9% of the total sample were men with the level education of below diploma.

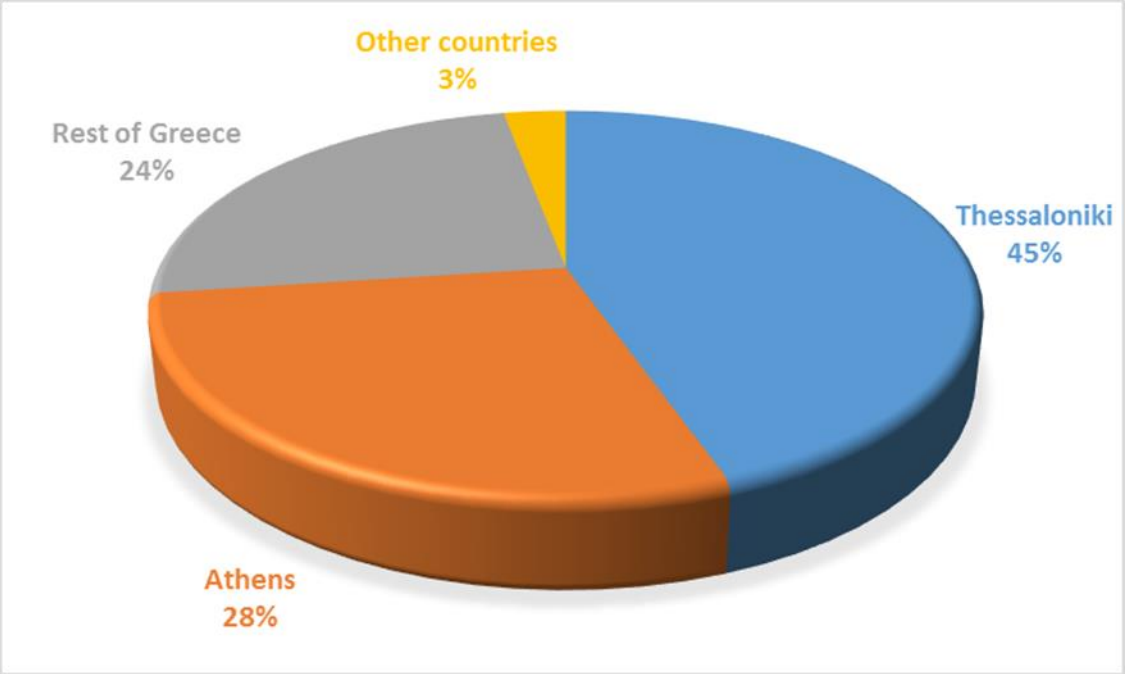

Figure 6: Distribution of responders according to their city of residence

As illustrated above most of the participants are Greek people which they are living mostly in the biggest cities of the country. Although, a small part of the sample is Greek people which living abroad or even foreign students who used to study in Greece and then they returned to their native countries. 153 out of 343 participants are used to live at Thessaloniki, and 57 of them are between the ages of 19-25. 97 people live at Athens, and 24% of participants live at the rest of Greece. Although, only ten members of this survey living abroad and the 50% of them, are between the ages of 26-35. In addition, the main difficulty that we had to comprise, is that it was tough to reach people which their age was over 50 years old and they are living at Athens, for this reason only 8 participants meet these standards.

4.2 Results about Recycling

This part of the questionnaire created to understand better how people think about and react to the environment and the process of recycling. The theory part led us to make these questions and analyze the consumer behavior regarding sustainability and how "green" way of life has affected them. The structure of this specific part of the questionnaire has been made to lead the participants to fill mandatory all the questions with simple answers as "Not at all important" and "Very important" or multiple choice answers.

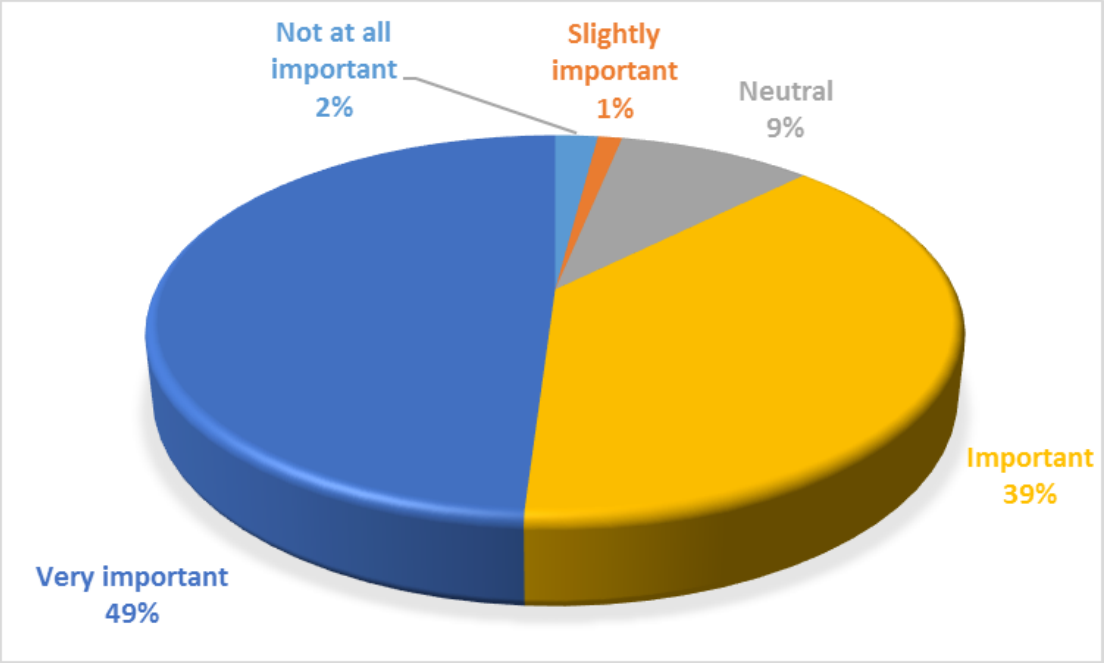

Figure 7: Responses in question "How important is the environment for you?"

As illustrated above, 132 participants answered that the environment is important to their lives and only 7 out of 343 participants believe that environment is not at all important to them, 3 of them between the ages of 19-25 and 4 of them were over 50 years old. In addition, 32 people answer "Neutral," 20 were male and 12 female. Another factor to compare and analyze this question is the age of the participants. The results are quite optimistic because the 88.7% of the participants were between the ages 19-35 answered that environment is either essential or very important to them.

To be more specific, a quite significant percentage believe that the environment is either essential or very important to them, which shows that people tend to think about a lot of the sustainability of their planet and especially the youths. Although, at the following questions it shows that it is not only what people believe but what they are doing for it. At the following question, participants have been asked to establish their opinion about less packaging waste and how to interact with packages.

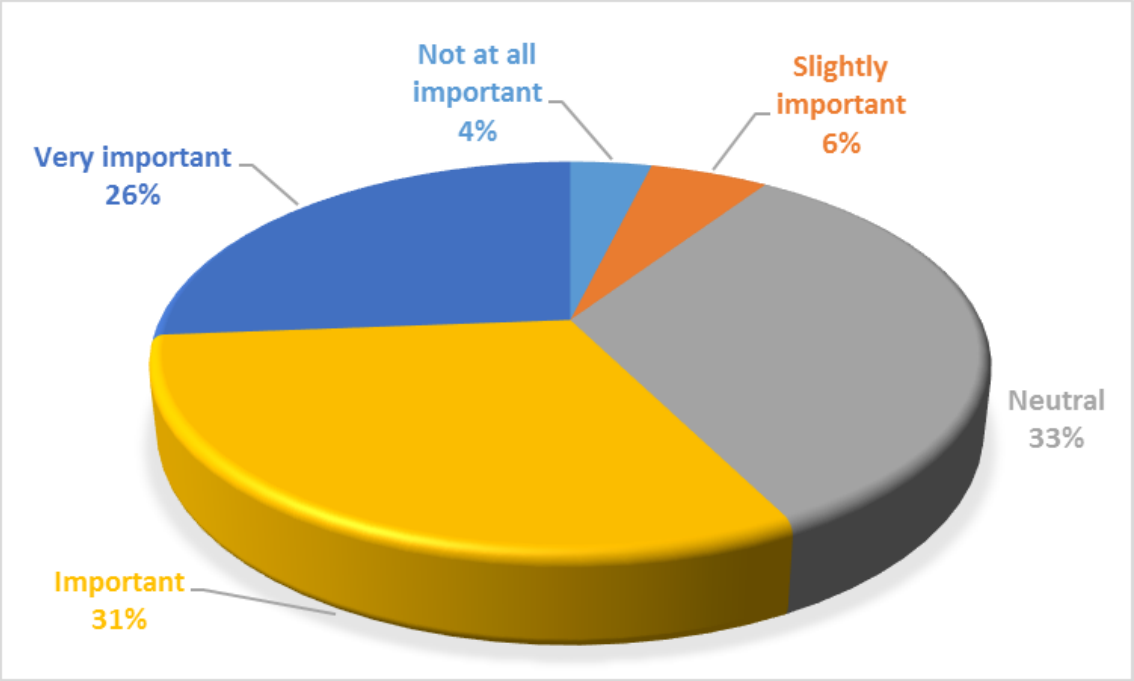

Figure 8: Responses in question "Indicate your opinion about the following statement "Less food and drinks packaging."

Of the 343 participants, 43 answered that it is important to consume less food or drink packages and 37 that is very important. All of them, were between the ages of 26-35, a quite impressive result as it shows that the new generation has understood that only if people change the way they are living can have a positive impact on the environment. Although, the 37.3% of the people were between the ages of 19-25 answer that were undecided about this statement. 19 out of 343 participants believed that less food and drink packages have slight importance to them.

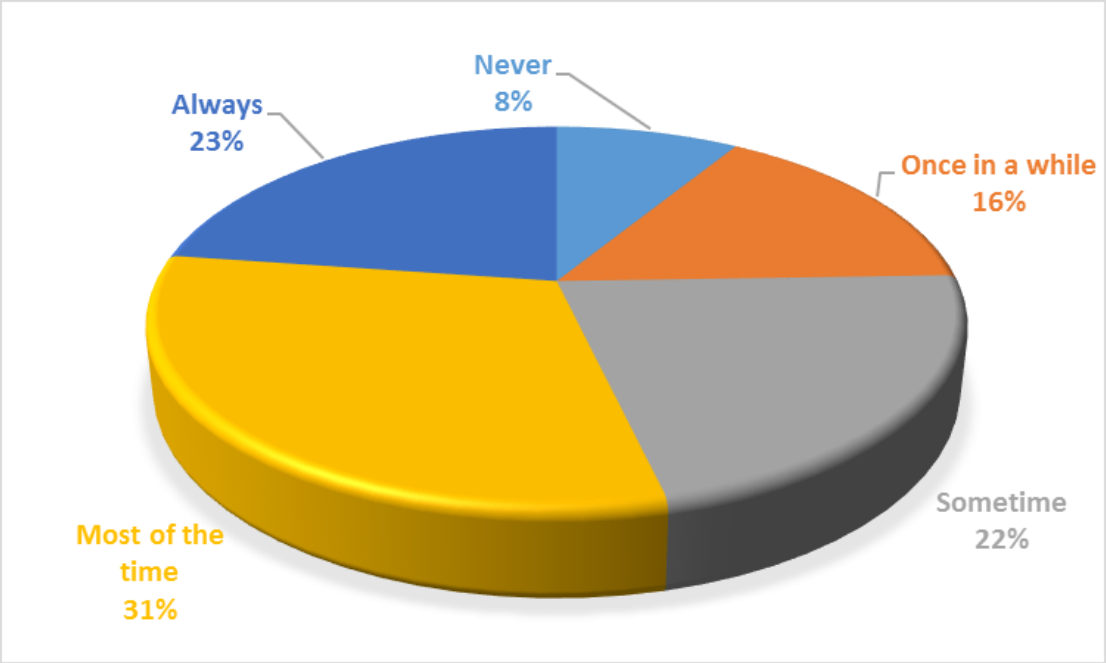

Figure 9: Responses in question "How often do you recycle?"

As illustrated previously to the Figure 7, 87.4% of the participants believed that the environment was quite important to them, although, after the analyzing of this specific question, it is obvious that although many people seem to care about the environment only 23% recycle every time, 41 people of them were highly educated. This result is discouraging, due to the fact that people tend to report what they should be doing and not what they are doing. 30 people out of 343 reported that they never recycle, which 14 of them were with the level of diploma education.

Another factor to compare and analyze this question is the age of the participants. Only 2 out of 20 people were over 50 years old used to recycle every day, the main reason about that could be probably either body disabilities or people are not so educated to understand how their action can change the world. On the other hand, 8 out of 124 participants were between the ages of 26-35, they never recycle.

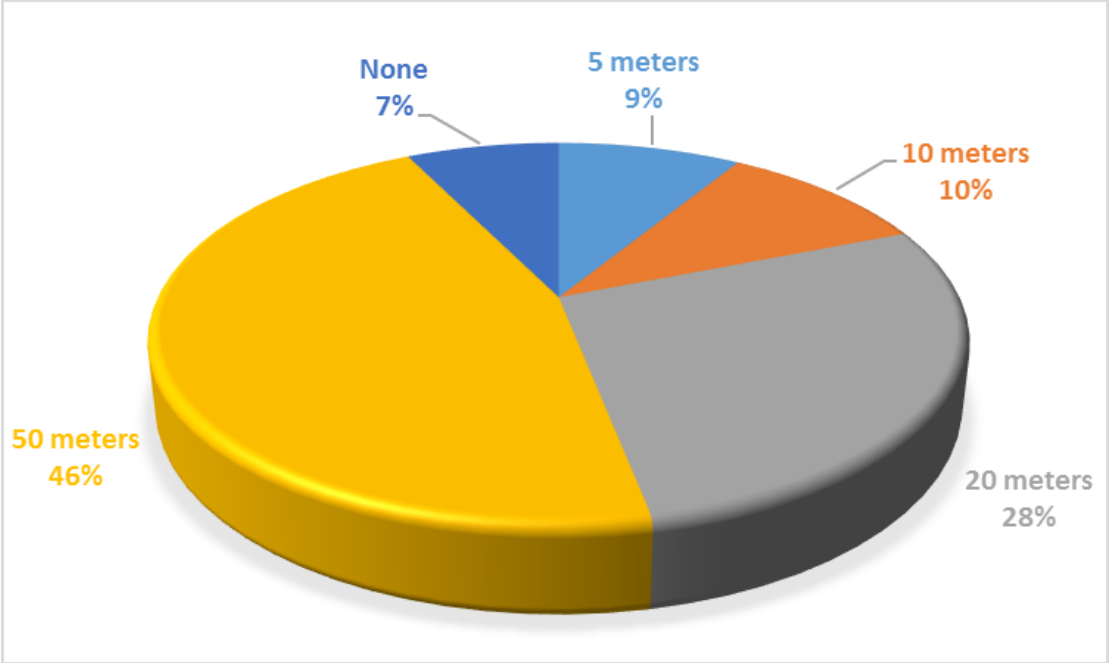

Figure 10: Responses in question "How far would you be prepared or expect to travel to use recycling bins?"

As it shows at the charts above, 157 people out of 343 answered that they would be prepared or expect to travel approximately 50 meters to use recycling bins, which is a quite big percentage if you take into consideration that 74 of them lives at Thessaloniki, the second biggest city in Greece. Although 25 people of the total sample, are not willing to walk for a few steps in order to recycle. 12 of them lives in the capital of Greece, which means that in biggest cities people either they are not able to find the specific blue bins near them or just don't care to add this extra process to their programs. For this reason, the next set of questions asked from the participants to either agree or disagree with what is the most common obstacle they face when they recycle.

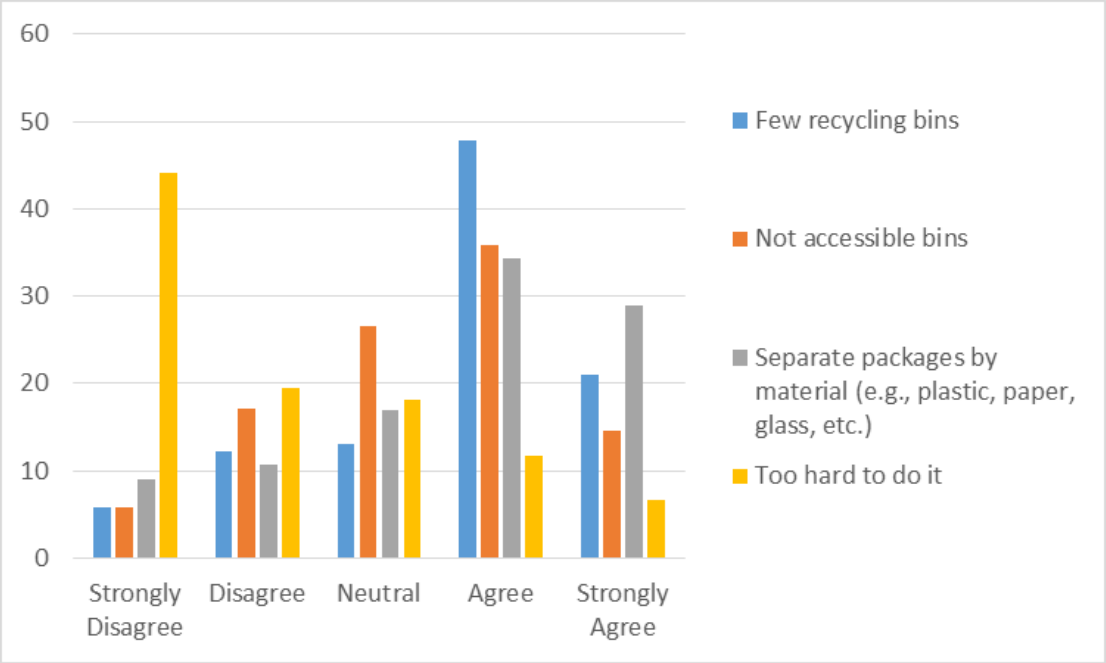

Figure 11: Responses in question "What are the most common obstacles a consumer faces when recycling?"

At this part of the questionnaire have been gathered a couple of obstacles that a person used to face when recycle. Some of them are that the individual blue bins are not accessible or are too few. To be more specific, 47.8% of the participants agreed that there are not many recycling bins near their home, 84 of them were female, and 80 of them were male, apart from that extra 72 people strongly agree about this problem. On the other hand, 20 people out of 343 answered that they strongly disagree with this statement.

The next problem that the 35.8% of the sample agreed was that there are not accessible bins where they live. 57 of these people used to live in Thessaloniki, a city with over 1 million inhabitants. Although, as it is shown, the problem is not only in Greece, three people out of 10 who live in other countries strongly agreed with this problem.

To continue with the next obstacle which seems to be the hardest one for those who recycle is to separate the packages by material (e.g., plastic, paper, glass, etc.). 34, 4% of the sample agreed that this is a major problem when they want to recycle due to the fact that many people either find it very time consuming or they do not know how to do this separation. However, only the 31% strongly disagree with this statement, and 14 people of them are highly educated.

The last obstacle that participants had to rate was the statement "Too hard to do it." Hopefully, 44% answered that they strongly disagree with this comment. Also, it is noticeable that nobody between the ages of 36-50 and people which is over 50 years old strongly agree with this issue. Taking everything into consideration, it is clear that many people, either find it difficult to recycle or they do not want to try more about this environmental issue.

4.3 Results of Labeling on Packages

At this specific section will be analyzed the reaction of consumers when they read a label on a package. As it will present below, it is shown that most of the people do not read the label on a product and even if they read them, they read the most basic information. Below you can see the results.

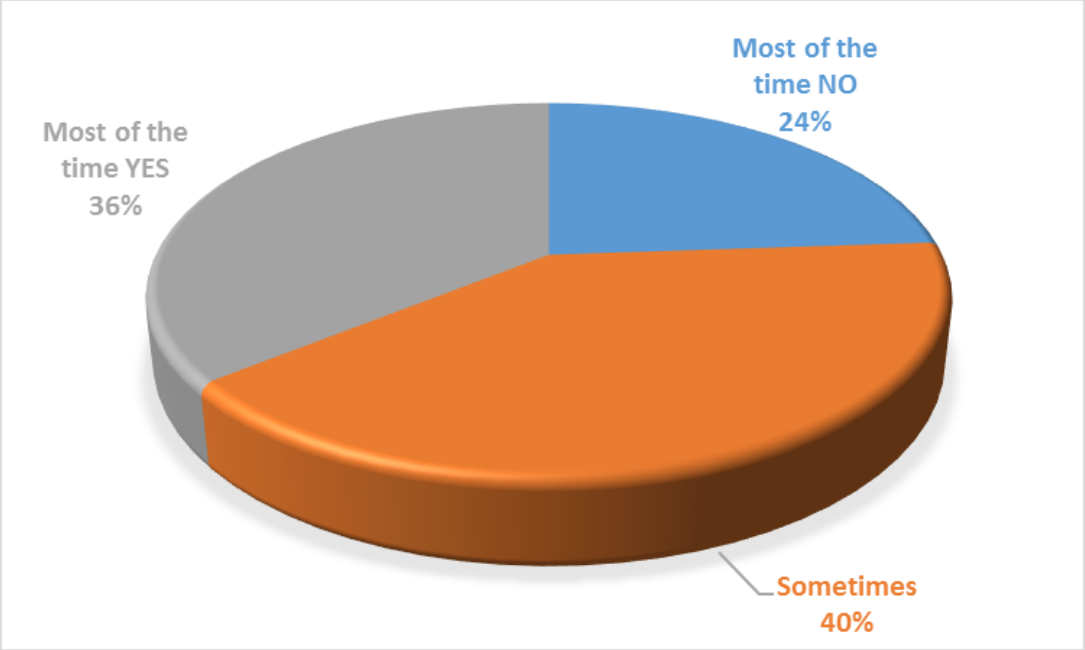

Figure 12: Responses in question "Do you read the label of food and drinks before buying?"

In this question, all the answers were approximately equally distributed. 82 people out of 343, report that most of the time do not read the labels of food and drinks before buying them. The 40% answered that sometimes used to read the labels, and then the rest 36% read most of the time the labels on packages. 35 women out of 168 reports that they never read the extra information that is written on the package and 73 men out

of 175 reports that sometimes takes an extra look at the packaging of the product that they are buying.

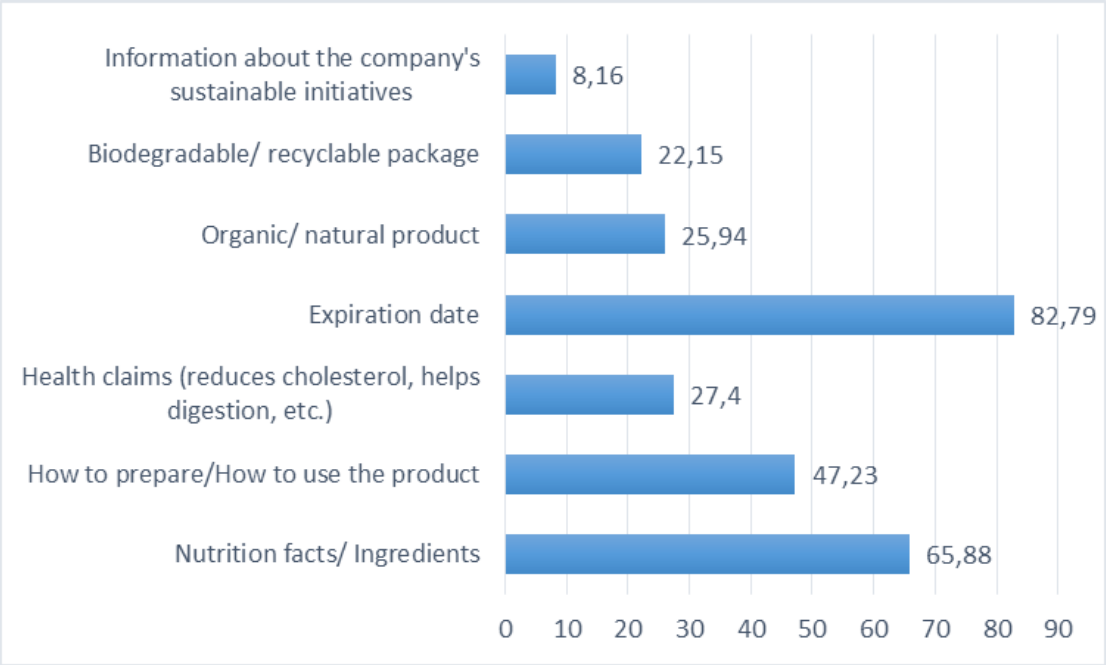

Figure 13: Responses in question "In general, what are you looking for on a label?"

On this chart, is illustrated all the primary information that a package can contain. The expiration date, health claims, and ingredients are some of them. However, as it is shown people tend to look most of the time the most basic information that they need. For this reason, the 65, 88% of the sample take a look at the ingredients and the nutrition facts that the food or the drink that they buy has. Next, the most useful information that consumers look is the expiration date, which the 82.79% tend to look every time they buy something. Then in more small percentage (47.23%) are the exclusive info about how to prepare or how to use the product. Unfortunately, the last thing that a consumer look on a package is information about the company's sustainable initiatives (8.16%) and if the package is biodegradable or recyclable (22.15%).

In addition, 10.8% of the participants, the only information that they are searching for on a food package is the expiration date, and 3.2% look only the ingredients of the product. The outcome of this question shows that people who seem to care about a lot about the environment, most of the time forget to go one step back, and believe that the environment is in danger only when people throw packages not when they buy them, which is completely wrong.

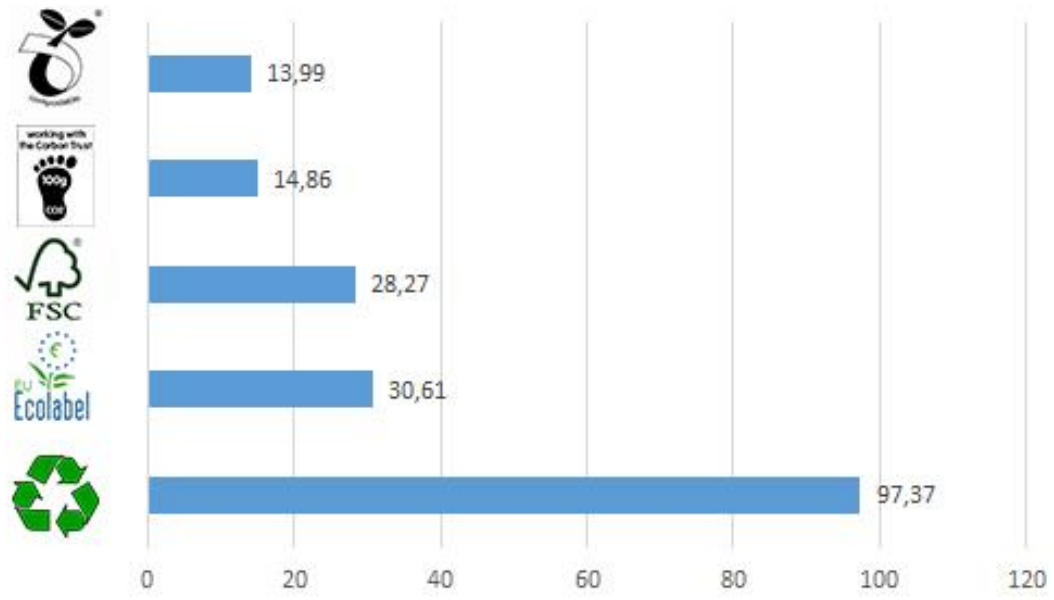

Figure 14: Responses in question "Which of the following logos do you recognize?"

In Figure 14, is illustrated if consumers can recognize different logos that have to do with the environment and they face daily in their life. 334 participants out of 343 recognize the first logo which is the most famous one for recycling. This symbol indicates that an item is capable of being recycled and not that the object has already been recycled. Sometimes there is a percentage figure in the middle to emphasize that the packaging contains x% of a material that has been recycled (Recyclenow.com, 2017). In addition, the 41.7% of the sample recognized only this symbol.

The 30.61% recognized the second logo which is a voluntary scheme designed to encourage organizations to market products and services that are more sustainable and for European consumers - including public and private purchasers - to quickly identify them. To continue with, the Forest Steward Council was the third logo which only the 28.27% could recognize it. This logo identifies wood-based products from will manages forests independently certified by the rules of the FSC (Recyclenow.com, 2017).

The fourth in the row on the questionnaire was the Carbon Reduction Label, which is a public "promise" that the carbon footprint of a good or service has been measured and certified and the owner of the product or service has committed to reducing that footprint over the following two years (Ecolabelindex.com, 2017). This logo was known by the 14.86% of the sample, quite small percentage if you consider the deep

meaning of the impact that it has. Last but not least was the logo about composting, which only the 13.99% of the participants recognized it. Products certified to be industrially compostable according to the European standard EN 13432/14955 may bear this 'seedling' logo. Plastics that carry this symbol can be recycled with the garden waste through your local authority (Ecolabelindex.com, 2017).

4.4 Results of Consumer Willingness

The last part of the questionnaire created to analyze in detail the consumer willingness to purchase a more "green" product. The theory part led us to make these questions and analyze the consumer behavior regarding sustainability and if "green" way of life can become a part of their everyday routine. The structure of this specific part of the questionnaire has been made to lead the participants to fill mandatory all the questions with simple answers as "Not at all important" and "Very important" or multiple choice answers.

As it will present below, it is shown that the majority of the people tend to forget their environmental behavior when they confront the factor "price." Because economic crisis increases every year, Greek people have started to act differently when they see an expensive product. The results are presented below.

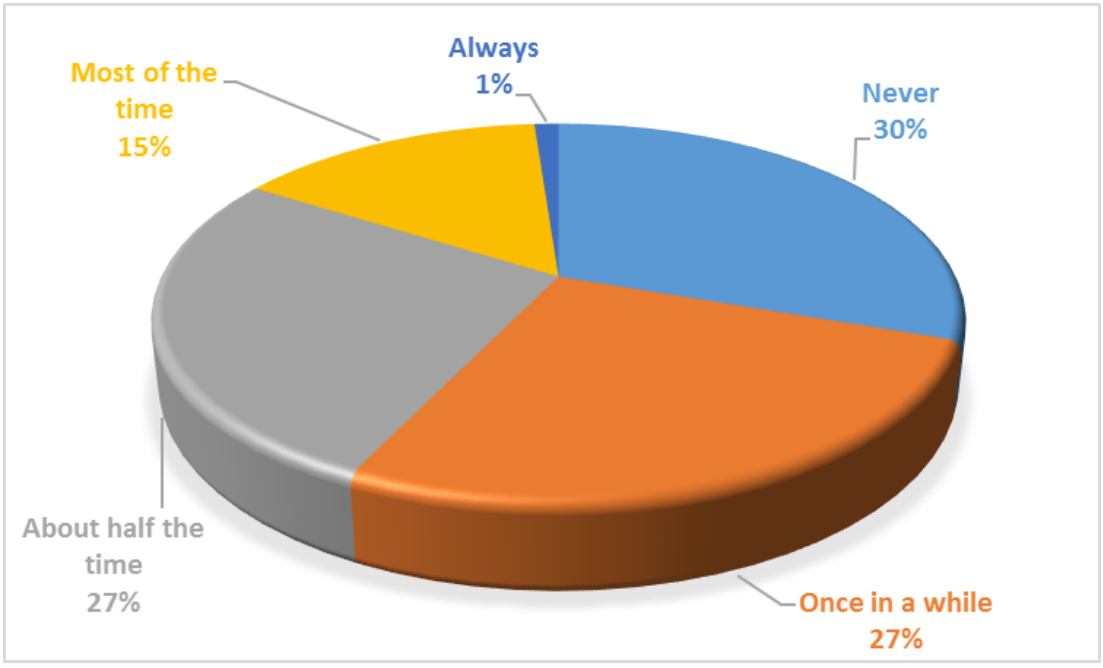

Figure 15: Responses in question "How often do you choose products over another because it is packed in compostable bag/package?"

As it is shown in Figure 13, only the 25.9% of the sample looking if the package of the product that they are buying is in biodegradable or compostable. Taking into consideration this factor, and as is presented above, 104 out of 343 participants of this survey will not choose a product over another because it is packed in the compostable package (30%), 61 of them were male. In addition, the options "Once in a while" and "About half the time" have been chosen equally by 92 participants each (27%).

Unfortunately, only four people out of 343 answered that used to choose a product over another when it is packed in the compostable package, 3 of them were male, and 1 of them was female. The results are quite discouraging, due to the fact that only the 1% look for a recyclable package, this thing could happen for several reasons, some of them could be that either people tend not to read the particular labels on the product (as it is mentioned in Figure 13) or they don't care about the unique features of the package or them are not proper informed about eco-friendly packages/bags. Moreover, 33 out of 51 that answered "Most of the time" on the statement were female.

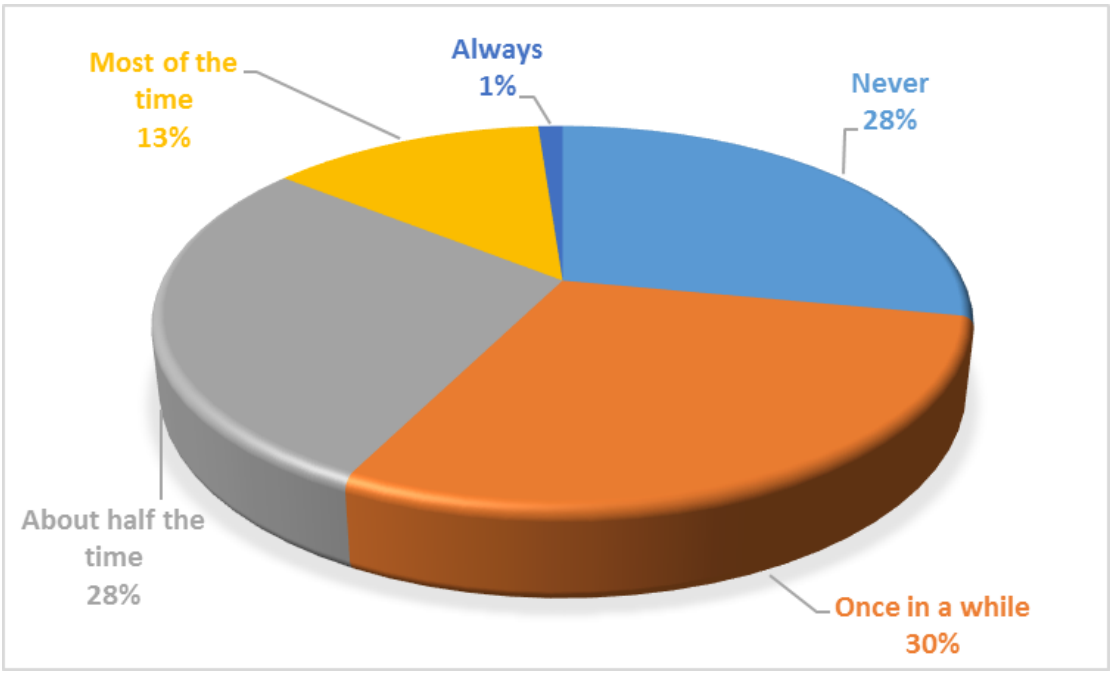

Figure 16: Responses in question "Indicate your opinion about the following statement "Purchasing products which packaging is made from recycling materials even though they cost more."

The question presented above is the sequel to the previous statement. On this question has been added the factor of "value" to the consumers and the results are the same disappointed as at Figure 15. The 28% of the sample report that they have never given

extra money for a packaging which has been made from recycling materials, 12 people were between the ages of 15-18 and 45 were between the ages of 19-25. 101 out of 343 participants chose the answer "Once in a while," and another 97 people chose the option "About half the time." 16 people that chose the last option were between the ages of 36-50.

Sadly, the disappointing results are the same as in the previous question. 45 people out of 343 have chosen the answer "Most of the time" which is a quite small percentage, although, means that some people try to adopt more eco-friendly habits. Moreover, only four people out of 343 (1%) answered that every time used to purchase products which packaging is made from recycling materials, even though they cost more. All of them were between the ages of 26-35.

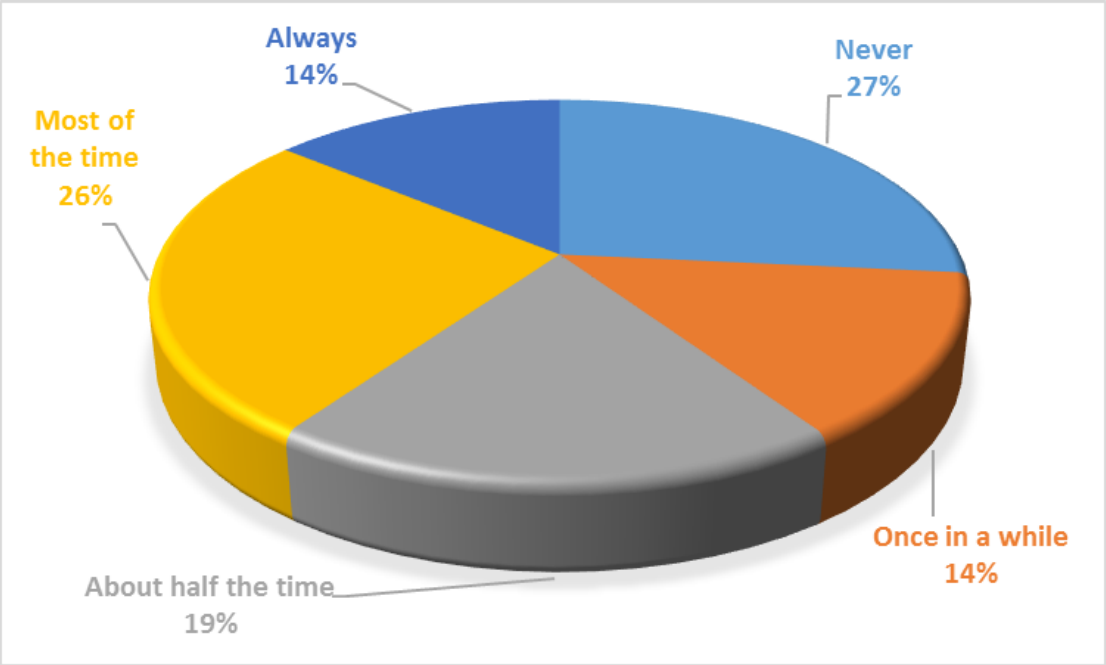

Figure 17: Responses in question "Indicate your opinion about the following statement "Purchasing the special fabric bag from the supermarket (multi uses) to avoid the unnecessary use of plastic bags."

As illustrated in the chart above, both two answers "Never" and "Most of the time," which are completely different have been chosen equally by the participants, 27%, and 26% respectively.32 out of 91 people who chose the answer "Never" lives in Athens. Moreover, 19% of the sample answered that about half the time used to purchase the special fabric bag from supermarkets to avoid the unnecessary use of plastic bags.

However, only 14% of the people that participated in the survey report that have to include this eco-friendly habit in their daily life. 27 of them lives at Thessaloniki, and 4 of them lives abroad. This fact is quite impressive if it is considered that 4 out of 10 people that live at other countries (about the 40%) use the special fabric bag every day in order to eliminate the plastic bags that they are using. This percentage is quite high and encouraging and probably can lead us to the result that in foreign countries has absorbed this small eco-friendly habit. Which means that it is the right time to educate and push Greek people to think in the same way as foreign citizens do, about the environment and the sustainability of it.

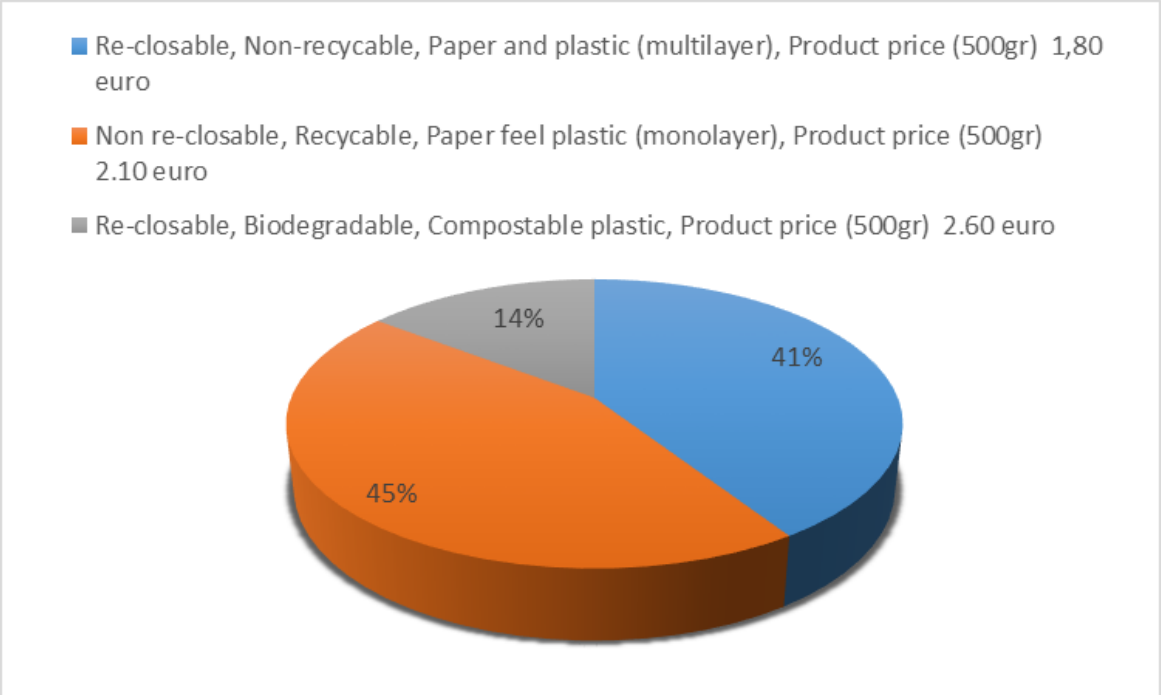

Figure 18: Responses in question "Which of the following product combination do you prefer the most with the following packaging attributes?"

The last question was the one that put participants into a challenge to choose from 3 different combinations of packaging. The product was one package of rice, and the features of the packaging and the price of it change in depends on the characteristics. The first choice was the cheapest one, and the package had the following features: "Re-closable, Non-recyclable, Paper and plastic (multilayer)." The price was 1, 80 euro for 500gr. The second option was a combination of the other two preferences. The package had the following features: "Non re-closable, Recyclable, Paper feel plastic (monolayer)" and the price of it, was 2.10 euro per 500gr. The last and the

environmental friendly package was in "Re-closable, Biodegradable and Compostable plastic package." For 500gr the consumer had to pay 2.60 euro. It is mentioned that the quality of rice is not relevant.

As illustrated in the chart above, the first and the second option have been chosen approximately equally by the participants (41% and 45% respectively). On the other hand, only 50 people out of 343 chose the third option which was the most environmentally friendly one but more expensive. The results of this question can lead to many conclusions. Taking everything into consideration, people either don't care about the packaging in its properties, as it mentioned above or they want to buy something in better quality but cannot afford it. For this reason, the highest percentage was on the second option which was a combination of the rest two preferences.

The economic crisis in Greece had led people to forget this kind of privileges, probably ten years ago people were not so educated and informed about this issues, or even companies were not obliged to follow environmental behavior. Nowadays, many people know and try to adopt an eco-friendly behavior but cannot invest so many money in it. They prefer to recycle and add an extra process to their daily routine than buy an expensive product because it is made of biodegradable and compostable plastic package.

On the other hand, also companies have to try more and market their sustainability. Perhaps, they can add an extra sticker at the front part of their package saying, e.g., that it is made of compostable paper. In this way, consumers can be informed very quickly and move forward due to the fact that this kind of marketing process is eye-catching. In addition, companies have to understand that product does not need to be expensive when it has some environmental features on its package. Companies have to trigger consumers in a way to add some eco-friendly habits in their daily life without making them pay more.

As it is analyzed into literature review, people were between the ages 19-35, want to be part of a sustainable environment, because they want to provide to their children a better place to live. Although, some habits are affected by the education of people, and this is shown on some results of the study. In this case, 18,8% (which was the highest percentage) of the participants that own a Ph.D., selected the third option which is the most expensive own, which can lead us to the results that highly educated people gain

more money and they can invest them easier on this kind of issues. Moreover, only four people out of 58 were with the level education of below diploma chose the more sustainable package. On the other hand, the lowest percentage of the first choice was by the people who own an MSc (43, 9%).

To conclude with, there are several reasons for a person to choose a more sustainable package for their products. The most common are, the education, the age and the income that they have. Although there are challenges, there are also ways to make things happen if you are sufficiently motivated. Still, the current system in Greece is stacked against ecological choices. All things being equal, people want to do the right thing, but it is a question of euro and cents. Moreover, right now it is cheaper and easier to send it all to the same dump.

CHAPTER FIVE: CONCLUSIONS & RECOMMENDATIONS

While it is not known how many of the responders follow their stated actions in reality, according to the results of this study consumers seems to care about the environment, although many of them tend to forget that for a better environment they don't only have to recycle but also use more environmental packages and of course less plastic bags.

The results of the survey agreed with the same way as Greek people act in their daily lives about the environment. Price was acknowledged as the primary factor affecting purchasing decisions. The primary question that this study hoped to answer was: "Are consumers willing to buy a product based on how eco-friendly its package is, even if it has a higher price point than competing products or if it goes against the consumer's brand preference?" Results indicate little (if any) preference for environmental friendliness of package over the brand trust, price, or quality. 88% of respondents described "importance of environment" as "slightly important" or "very important." However, when faced with actual an actual purchasing decision, 28% of respondents cited that they will never purchase products which packaging is made from recycling materials even though they cost more. Only 1% of respondents cited "environmental friendliness" as one of the primary factors affecting their purchasing decision. This showed a disconnection between the results of these two questions. The discrepancy between how a consumer claims to feel about environmental responsibility and the consumer's actual buying behavior was reflected in this study.

Data suggested that 27% of responders never use the special fabric bag when they go shopping to the supermarket. Only 14% of participants use in everyday life the specially designed bag. Although, probably Greek consumer will change their mind about plastic bags, due to the fact that, from 1st January 2018, consumers have to pay 4 cents per plastic bag because Greece is going to integrate its relevant law with EU legislation. The purpose of this legislation is to reduce the number of bags per person. The main and first goal of this project is in the next two years to be used 90 plastic bags per person and 40 by 2025. (GTP Headlines, 2018) Consistent with Research Institute of Retail Consumer Goods (IELKA) findings, 4,3 billion plastic bags used by Greek population per year. The most disappointing part is that only 1% is recycled. Indicatively, in 2016 each person reported for some 400 bags, 270 of which are at supermarkets. In addition,

in Europe, Greece holds the top spot regarding the use of plastic bag per capita. On the other hand, the EU average of the plastic bag is 175 per person (GTP Headlines, 2018). The last question of the questionnaire simulated an actual point-of-purchase decision where the consumer had to choose which product to buy the three options that they had. The main difference that those 3 products had was the packaging and the price of it. All of these packages contained the same quality and quantity of rice. The first and the second option have been chosen approximately equally by the participants (41% and 45% respectively). On the other hand, only 50 people out of 343 chose the third option which was the most environmentally friendly one but more expensive.

The first option was the cheapest one and the less eco-friendly. The third option was the more expensive one and also the most eco-friendly. The second packages were something between the others two. 41% of respondents claimed they would purchase the first option of the package and 45% choose the second one. Only the 14% of the sample chose the package which was more eco-friendly. These results from the last question suggest that there are some consumers willing to spend more money for sustainable packaging, but the vast majority are not willing to let the product's package affect what or how many products they buy.

Based on the previous results, there were not many consumers willing to purchase a product based on the environmental friendliness of its package even if it has a higher price than competing products or if it went against their brand preference. Price, brand, and quality, appear to be far more essential to consumers than any other element. Most of the participants were not willing to pay an extra 25%-30% for a product packaged. It was not so clear whether the price would be as important if the economy were more stable; it would be interesting to repeat this study under better economic circumstances. This research was presented among a large sample size (343 participants), but the results coincide with the results of surveys cited in the literature review; consumers will respond positively to questions as regards the seriousness of the environment, but when other, real-world aspects are introduced (quality, price, aesthetics), environment, recyclability, and sustainability become much less essential. Based on these results, investing in sustainable packaging at the expense of any other purchasing factor is probably not a profitable decision.

However, sustainable packaging should be highly promoted due to the fact that either businesses or consumers benefit from it. According to environmental issues, a proper sustainable packaging help to reduce CO_2 emissions, which have been connected with global warming and climate change. Although businesses will not be affected from one day to the next, they can benefit from sustainable packaging by promoting their responsibility to the planet and giving a boost to their brand. Seeing this issue from logistics aspect, less packaging lead to reduce the load size. In this way, businesses can save money on transportation, use less fuel and also reduce carbon emission from the trucks they use. Last but not least, businesses have to keep the planet safe throughout the use of sustainable products and technologies, in order to make consumers appreciate the fact that they are able to purchase products they desire without feeling that they contribute to the degradation of the planet.

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APPENDIX

APPENDIX A

Questionnaire

Demographic data

1. Gender
   - Male
   - Female

2. Age
   - 15-18
   - 19-25
   - 26-35
   - 36-50
   - Over 50

3. Education
   - None
   - BA-BS
   - MSc
   - PhD

4. City of residence
   - Thessaloniki
   - Athens
   - Rest of Greece
   - Another country

Recycling

5. How important is the environment for you?

    - Not at all important
    - Slightly important
    - Neutral
    - Important
    - Very important

6. Indicate your opinion about the following statement "Less food and drinks packaging."

    - Not at all important
    - Slightly important
    - Neutral
    - Important
    - Very important

7. How often do you recycle?

    - Never
    - Once in a while
    - Sometimes
    - Most of the time
    - Always

8. How far would you be prepared or expect to travel to use recycling bins?

    - 5 meters
    - 10 meters
    - 20 meters
    - 50 meters
    - None

9. What are the most common obstacles a consumer's faces when recycling?

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
A few recycling bins					
Not accessible bins					
Separate packages by material (e.g., plastic, paper, glass, etc.)					
Too hard to do it					

Labeling

10. Do you read the label of food and drinks before buying?

- ☐ Most of the time NO
- ☐ Sometimes
- ☐ Most of the time YES

11. In general, what are you looking for on a label?

Note: Multiple answers are possible

- ☐ Nutrition facts/ Ingredients
- ☐ How to prepare/How to use the product
- ☐ Health claims (reduces cholesterol, helps digestion, etc.)
- ☐ Expiration date
- ☐ Organic/ natural product
- ☐ Biodegradable/ recyclable package
- ☐ Information about the company's sustainable initiatives

12. Which of the following logos do you recognize?

Note: Multiple answers are possible

☐ 

☐ 

☐ 

 

 

Consumer willingness

13. How often do you choose products over another because it is packed in compostable bag/package?

    - Never
    - Once in a while
    - Sometimes
    - Most of the time
    - Always

14. Indicate your opinion about the following statement "Purchasing products which packaging is made from recycling materials even though they cost more."

    - Never
    - Once in a while
    - Sometimes
    - Most of the time
    - Always

15. Indicate your opinion about the following statement "Purchasing the special fabric bag from the supermarket (multi uses) to avoid the unnecessary use of plastic bags."

- ☐ Never
- ☐ Once in a while
- ☐ Sometimes
- ☐ Most of the time
- ☐ Always

16. Which of the following product combination do you prefer the most with the following packaging attributes?

Note: The taste of the rice is not relevant

- ☐ Re-closable, Non-recycable, Paper and plastic (multilayer), Product price (500gr) 1,80 euro
- ☐ Non re-closable, Recycable, Paper feel plastic (monolayer), Product price (500gr) 2.10 euro
- ☐ Re-closable, Biodegradable, Compostable plastic, Product price (500gr) 2.60 euro

APPENDIX B

DEMOGRAPHICS

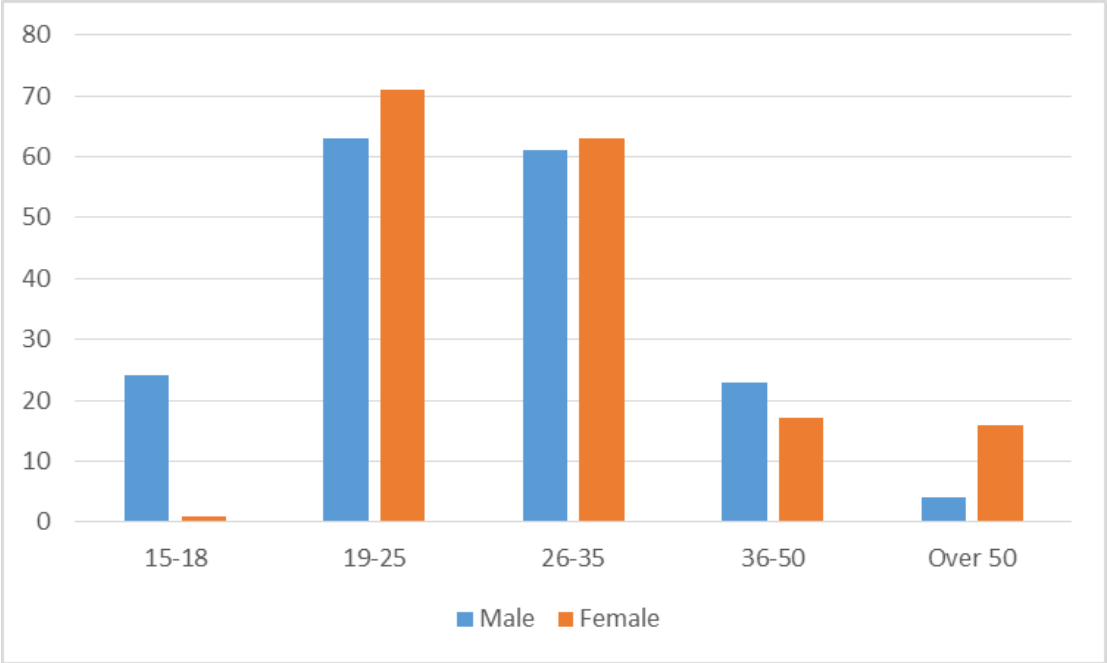

Figure B. 1: Distribution of responders according to their gender and their age

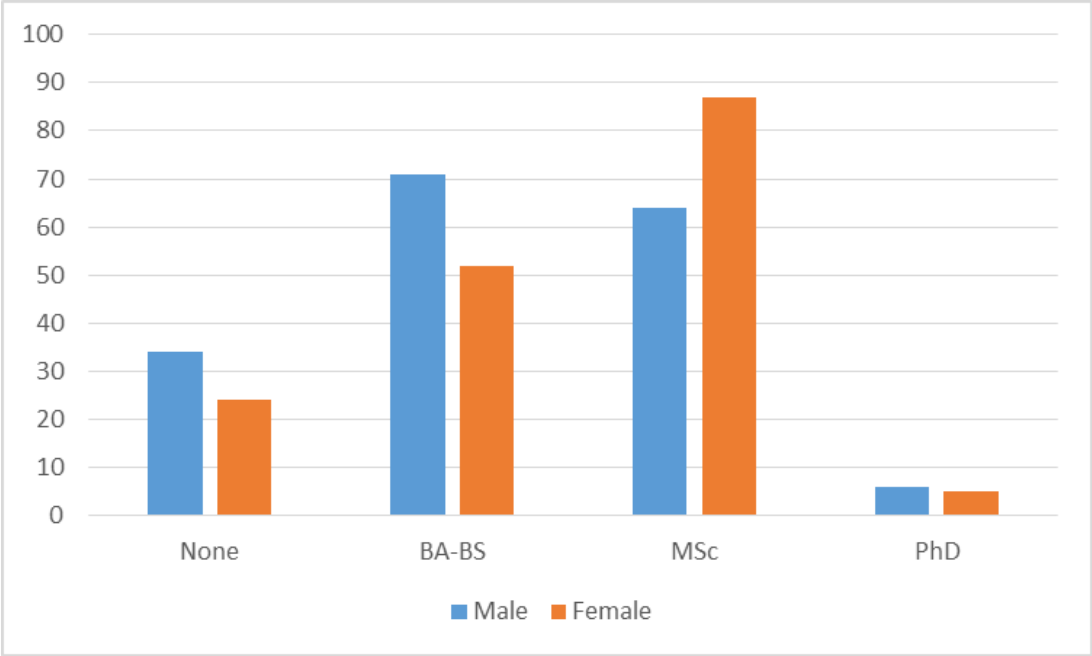

Figure B. 2: Distribution of responders according to their gender and their education

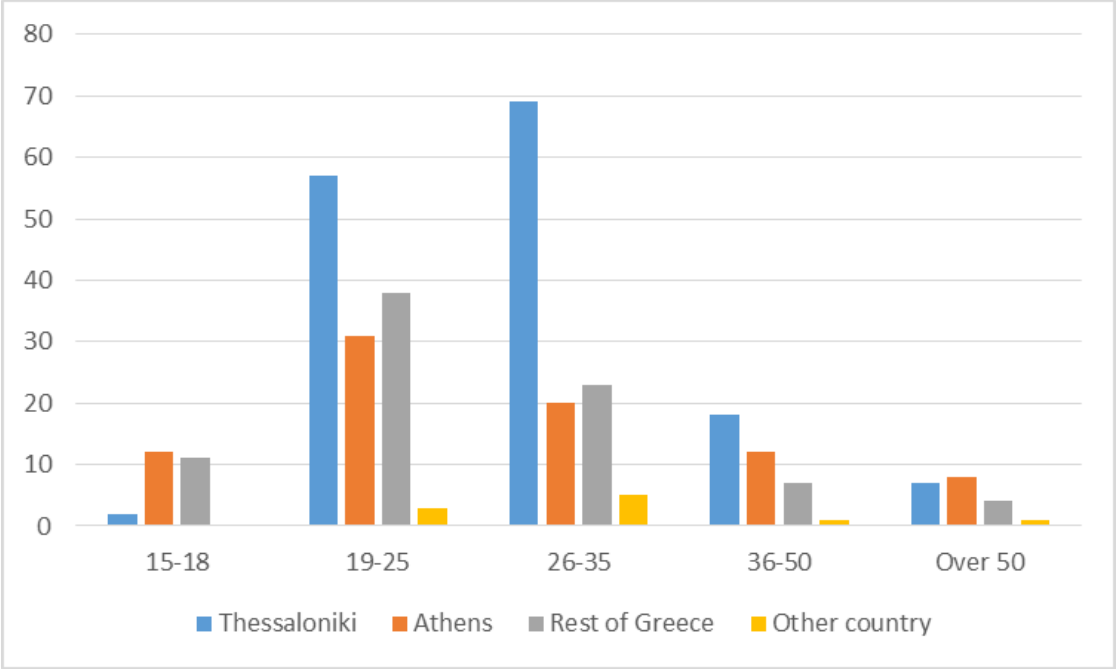

Figure B. 3: Distribution of responders according to their city of residence and their age

RECYCLING

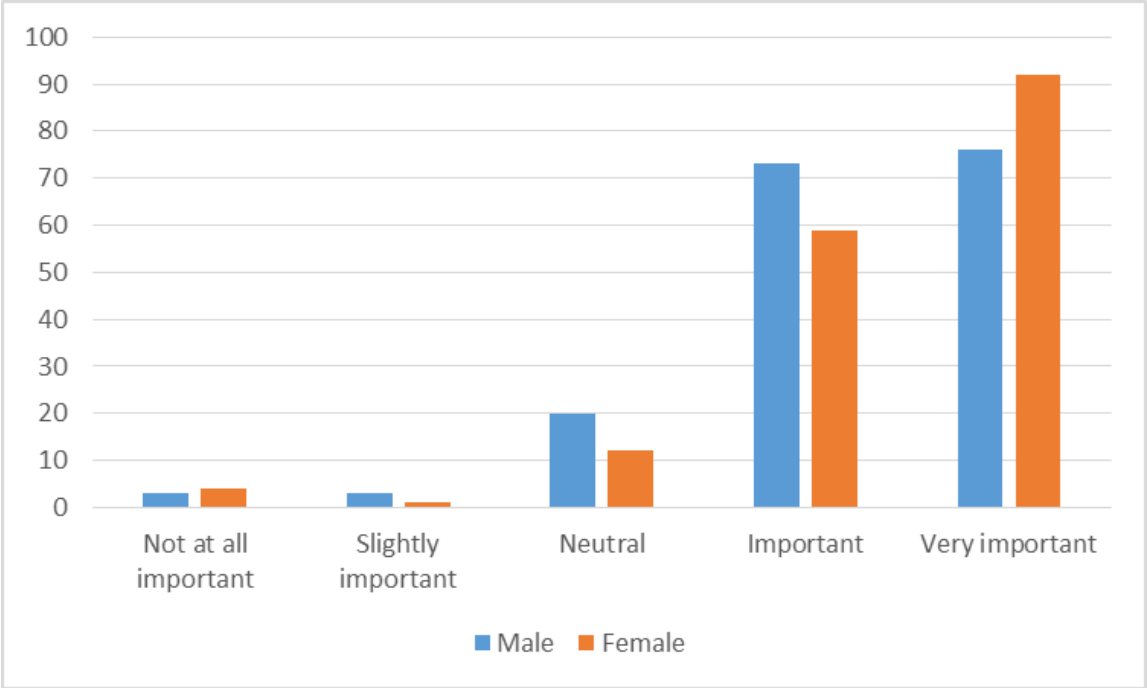

Figure B. 4: Distribution of responders in question "How important is the environment for you?" according to their gender

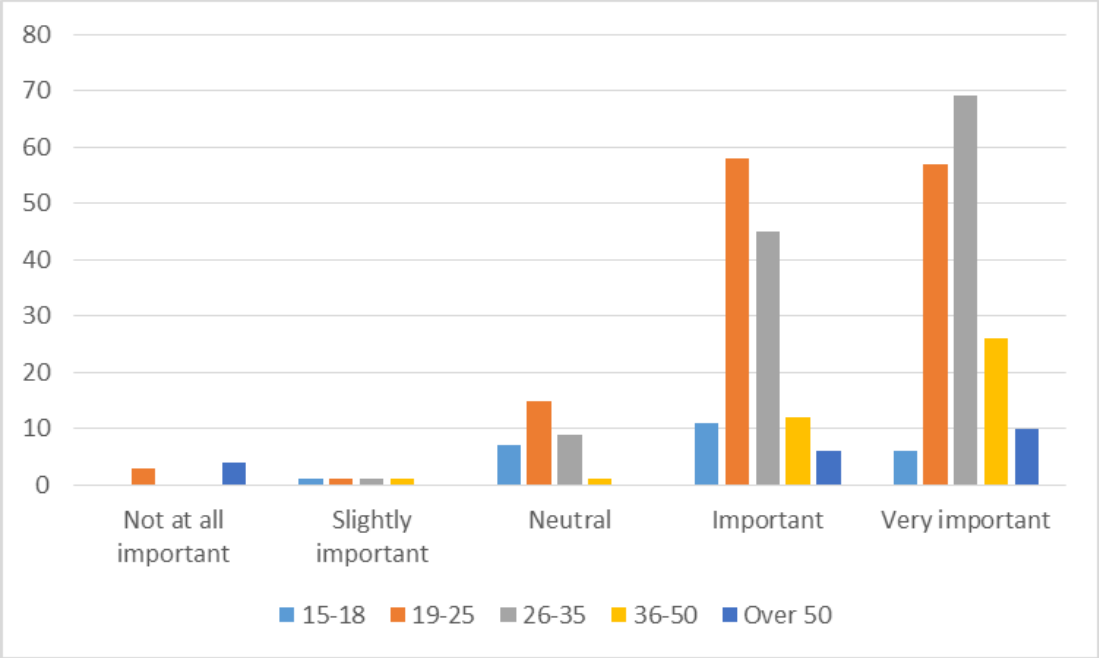

Figure B. 5: Distribution of responders in question "How important is the environment for you?" according to their age

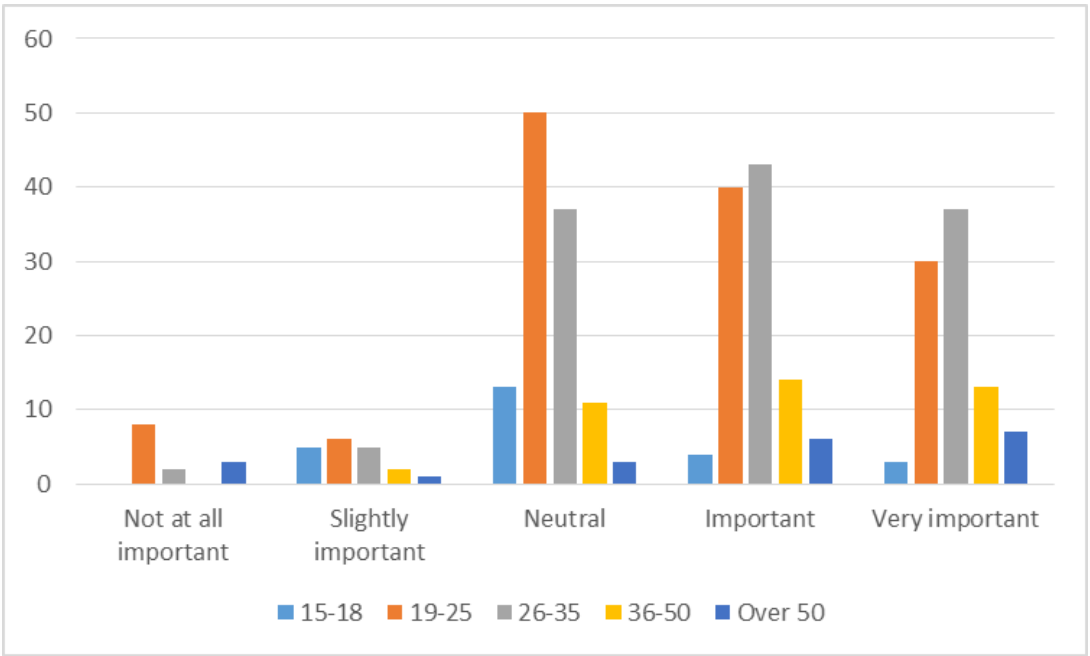

Figure B. 6: Distribution of responders in question "Indicate your opinion about the following statement "Less food and drinks packaging" according to their age

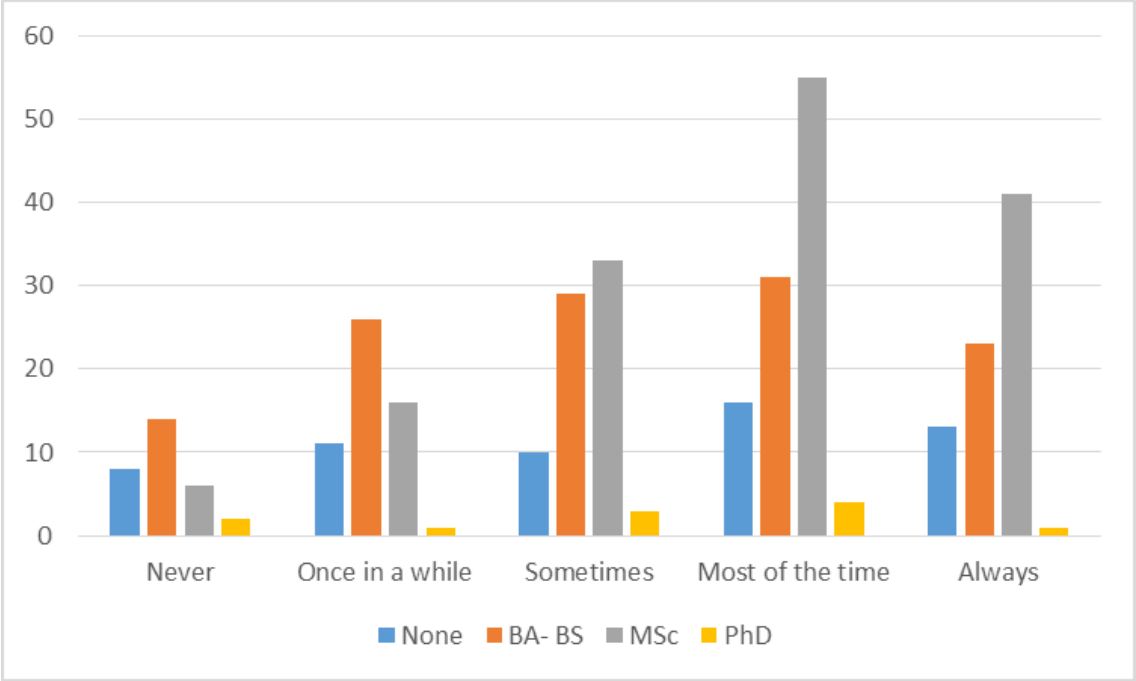

Figure B. 7: Distribution of responders in question "How often do you recycle?" according to their education

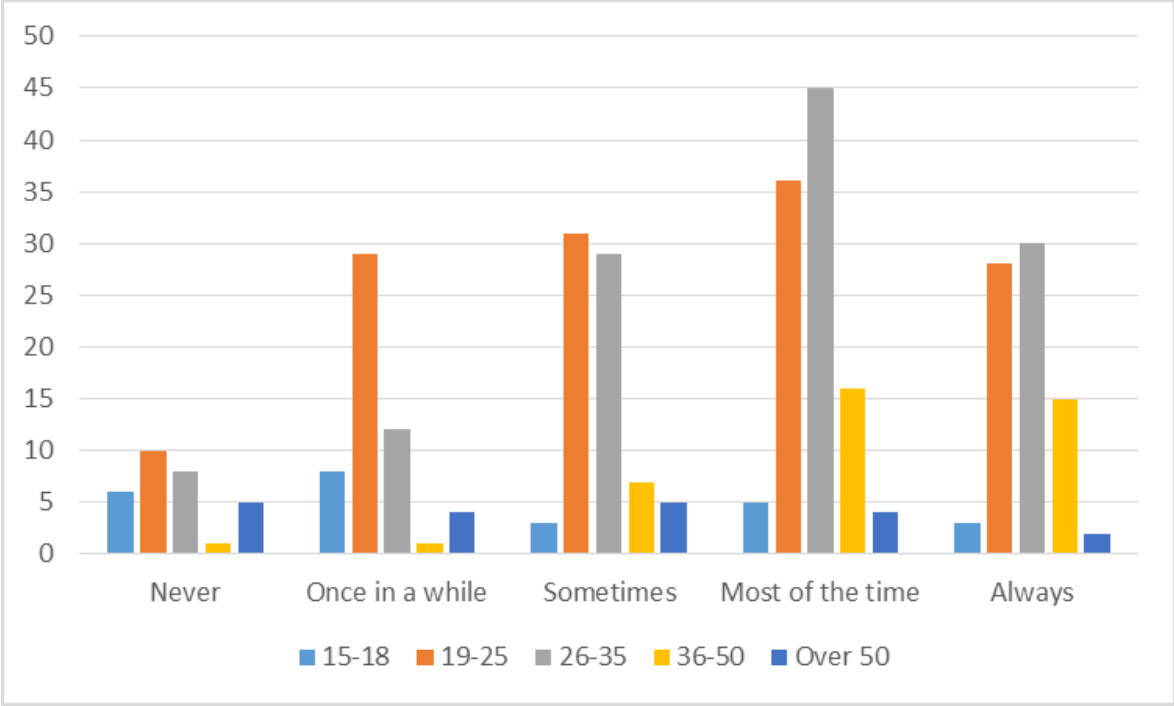

Figure B. 8: Distribution of responders in question "How often do you recycle?" according to their age

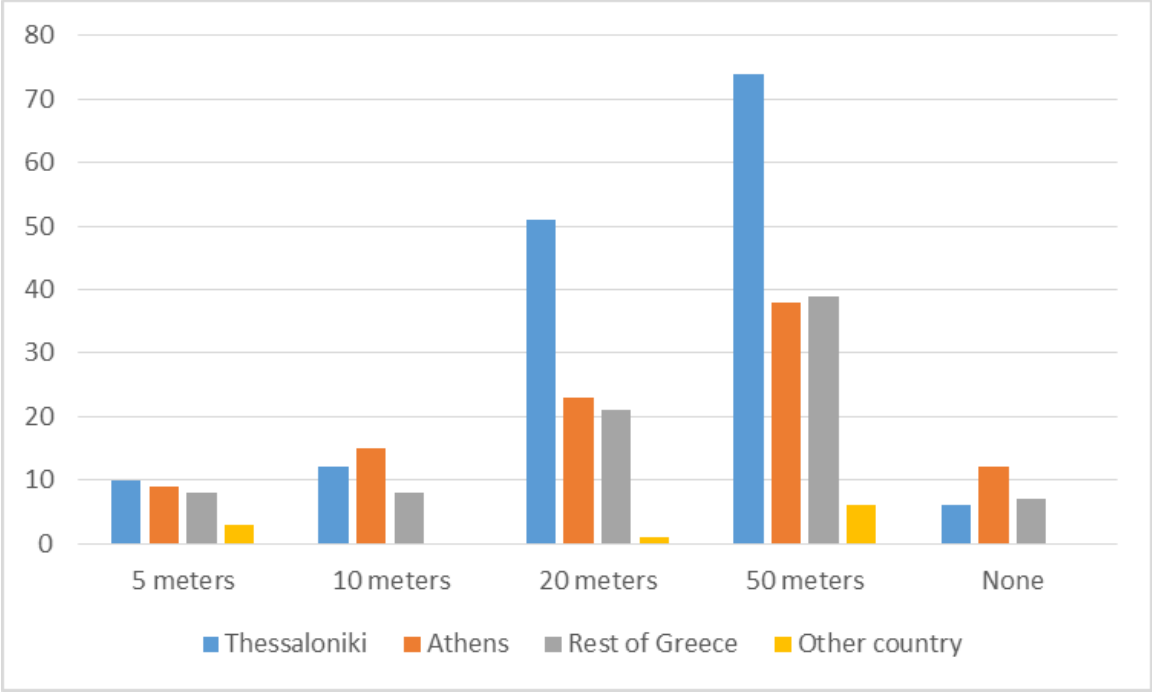

Figure B. 9: Distribution of responders in question "How far would you be prepared or expect to travel to use recycling bins?" according to their city of residence

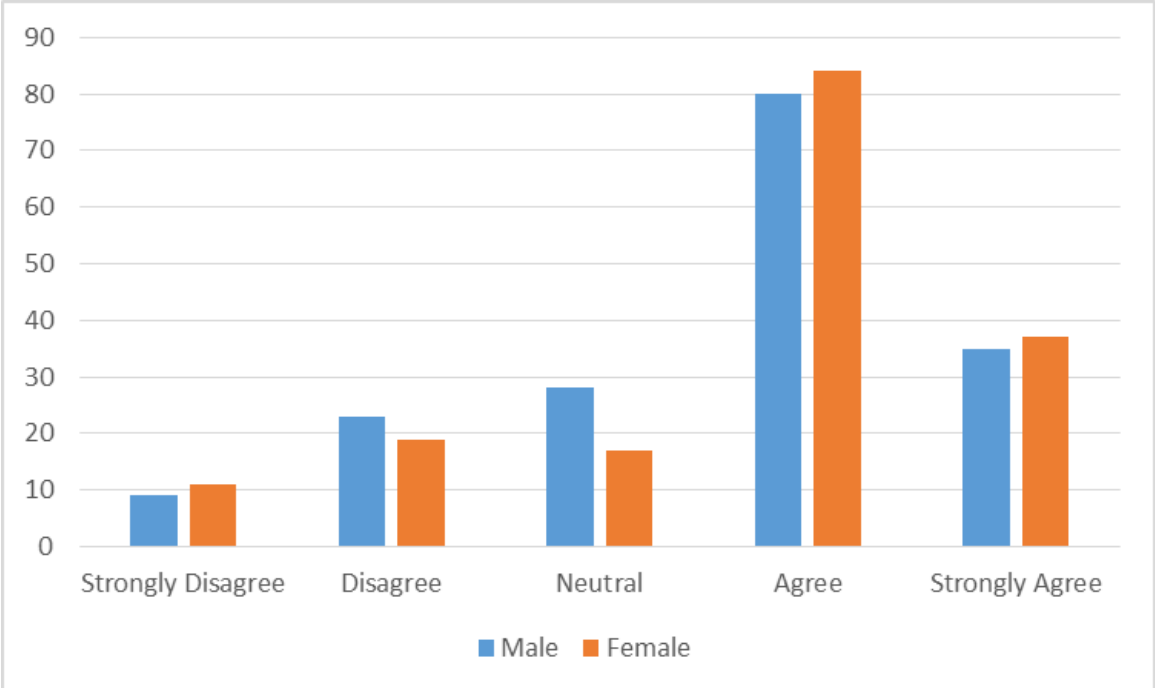

Figure B. 10: Distribution of responders in question "What are the most common obstacles a consumer faces when recycling?" (Few recycling bins), according to their gender

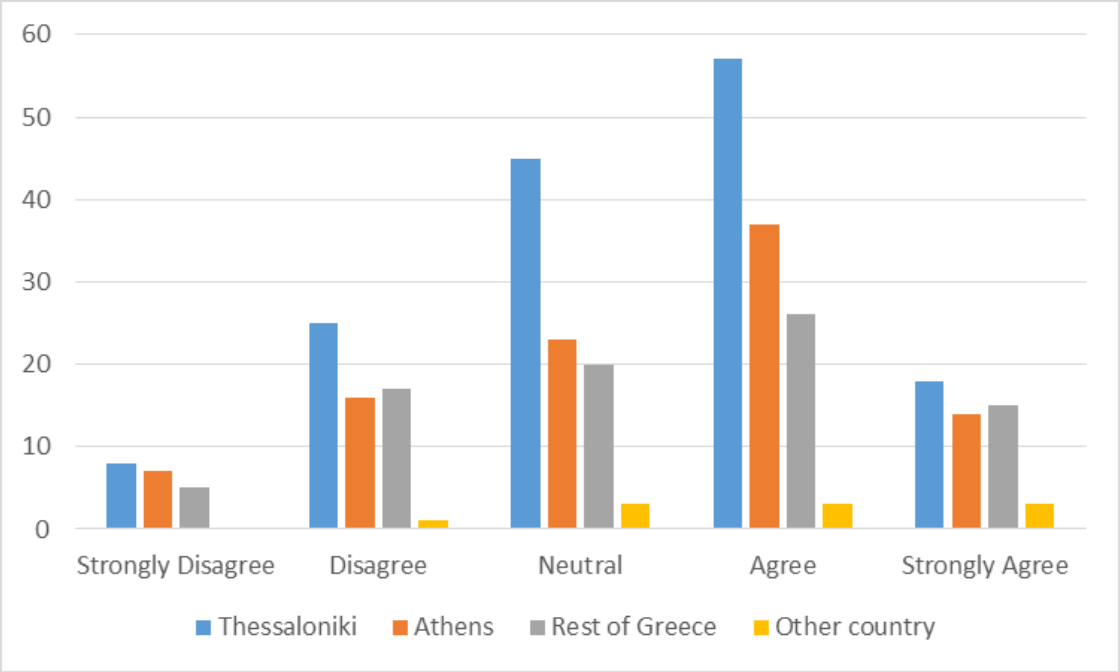

Figure B. 11: Distribution of responders in question "What are the most common obstacles a consumer faces when recycling?" (Not accessible bins), according to their city of residence

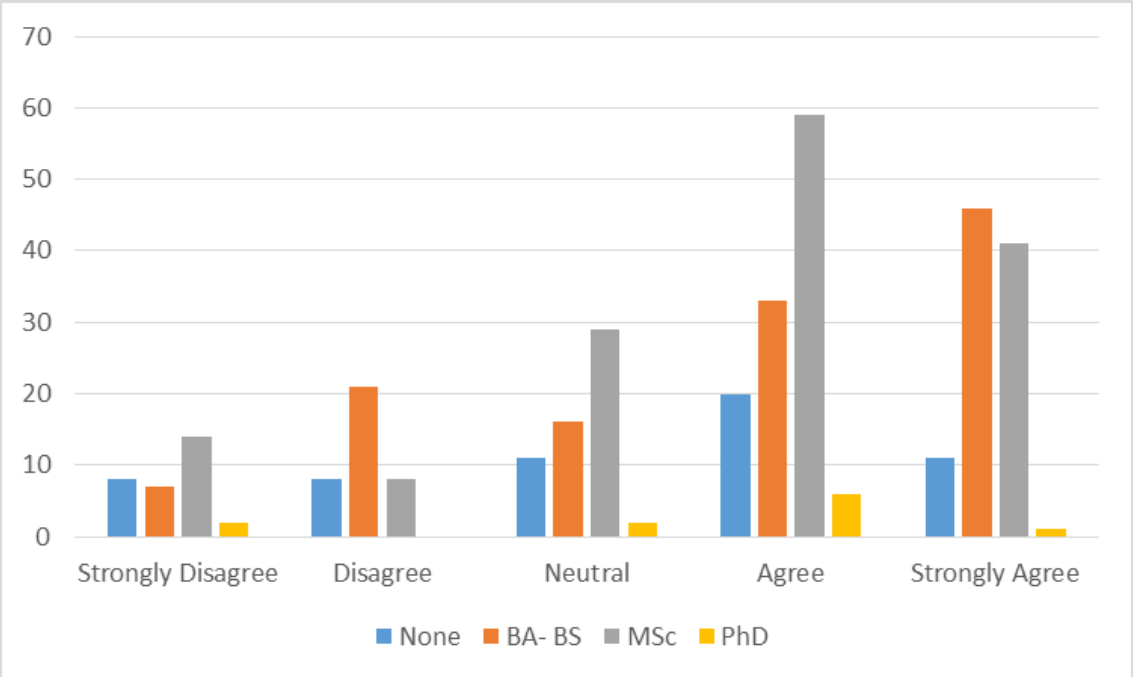

Figure B. 12: Distribution of responders in question "What are the most common obstacles a consumer faces when recycling?" (Separate packages by material (e.g., plastic, paper, glass, etc.), according to their education

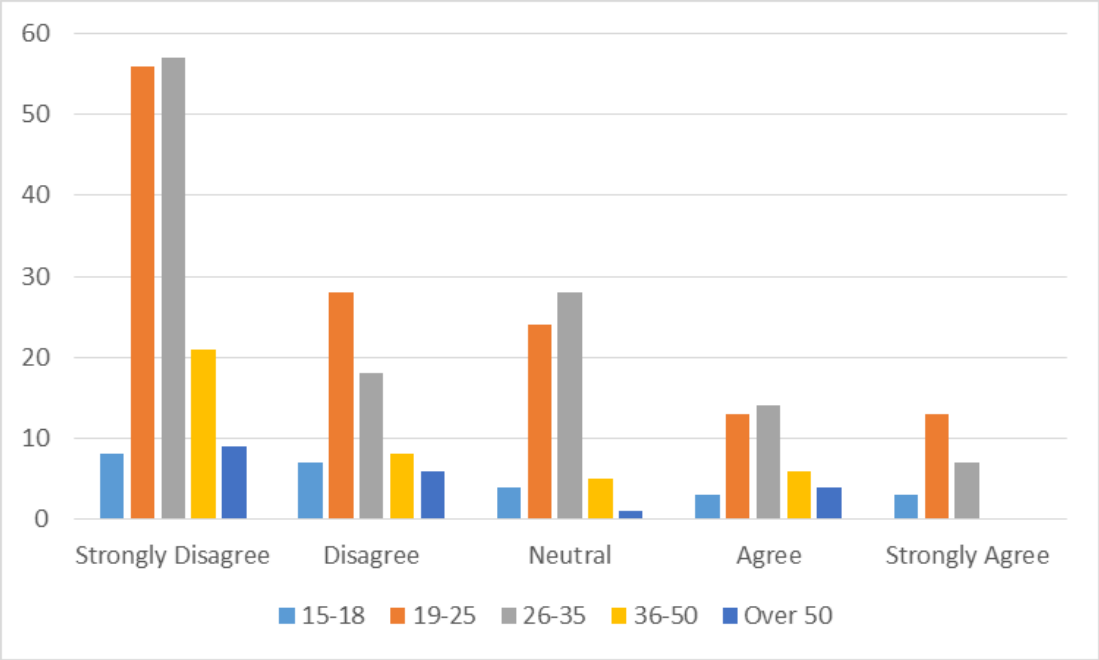

Figure B. 13: Distribution of responders in question "What are the most common obstacles a consumer faces when recycling?" (Too hard to do it), according to their age

LABELING

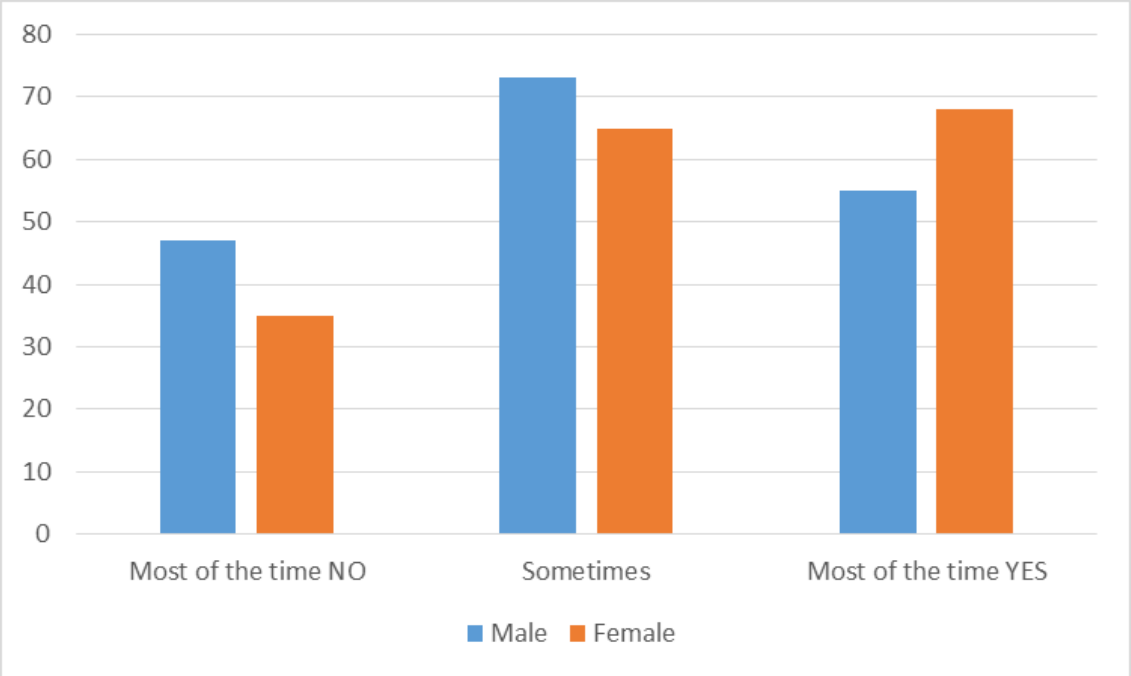

Figure B. 14: Distribution of responders in question "Do you read the label of food and drinks before buying?", according to their gender

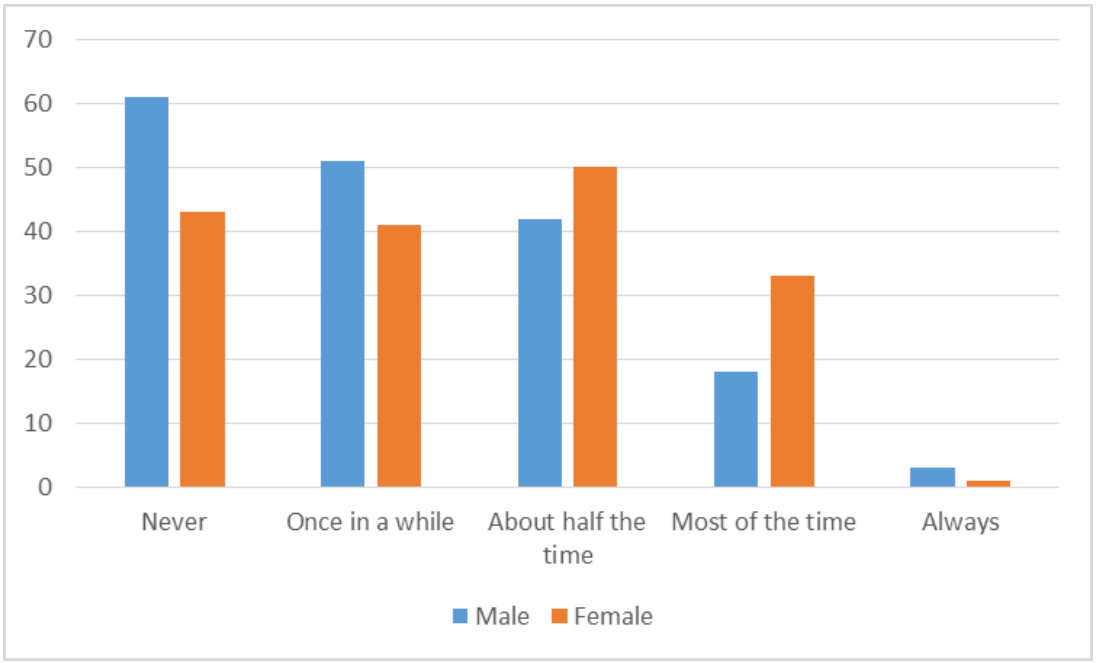

Figure B. 15: Distribution of responders in question "How often do you choose products over another because it is packed in compostable bag/package?", according to their gender

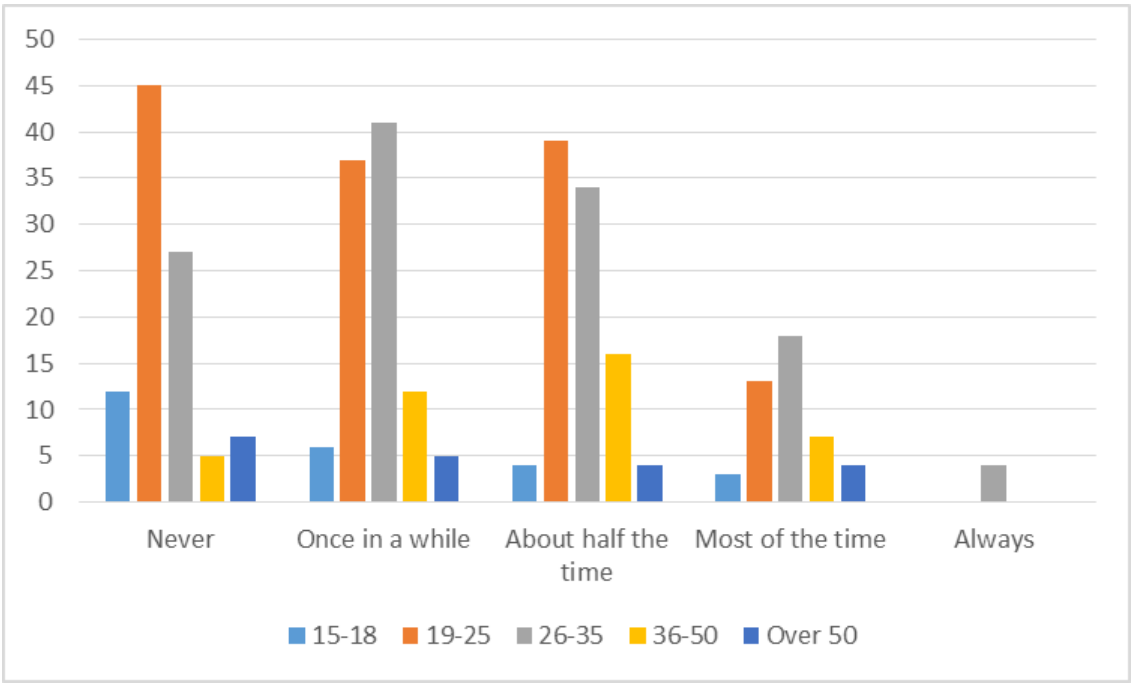

Figure B. 16: Distribution of responders in question "Indicate your opinion about the following statement "Purchasing products which packaging is made from recycling materials even though they cost more.", according to their age

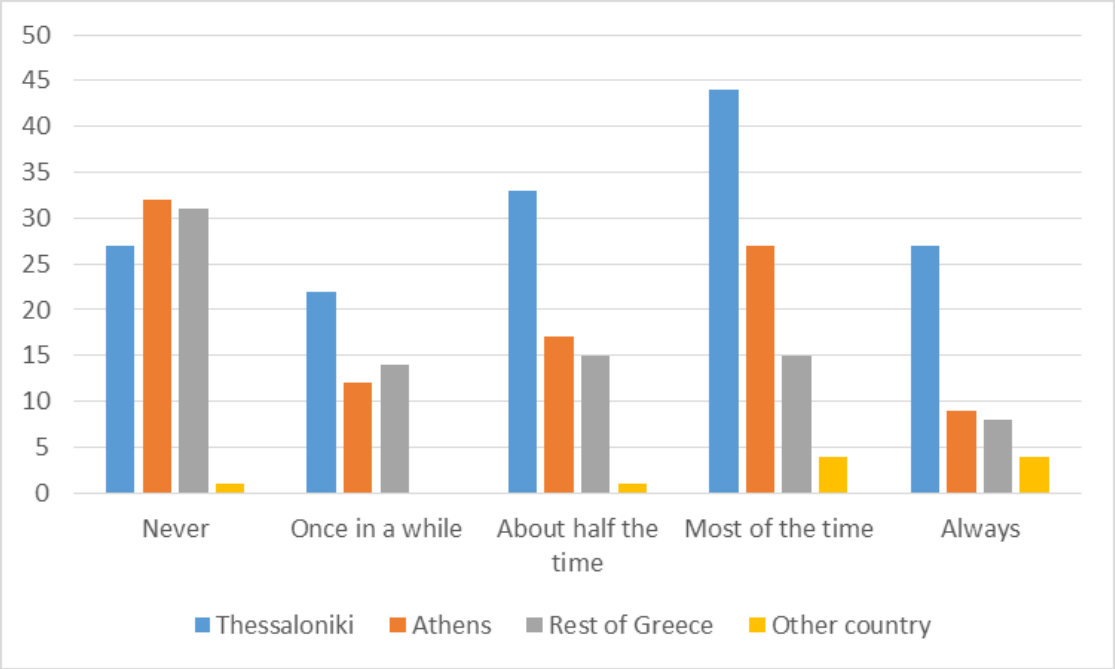

Figure B. 17: Distribution of responders in question "Indicate your opinion about the following statement "Purchasing the special fabric bag from supermarket (multi uses) to avoid the unnecessary use of plastic bags," according to their city of residence

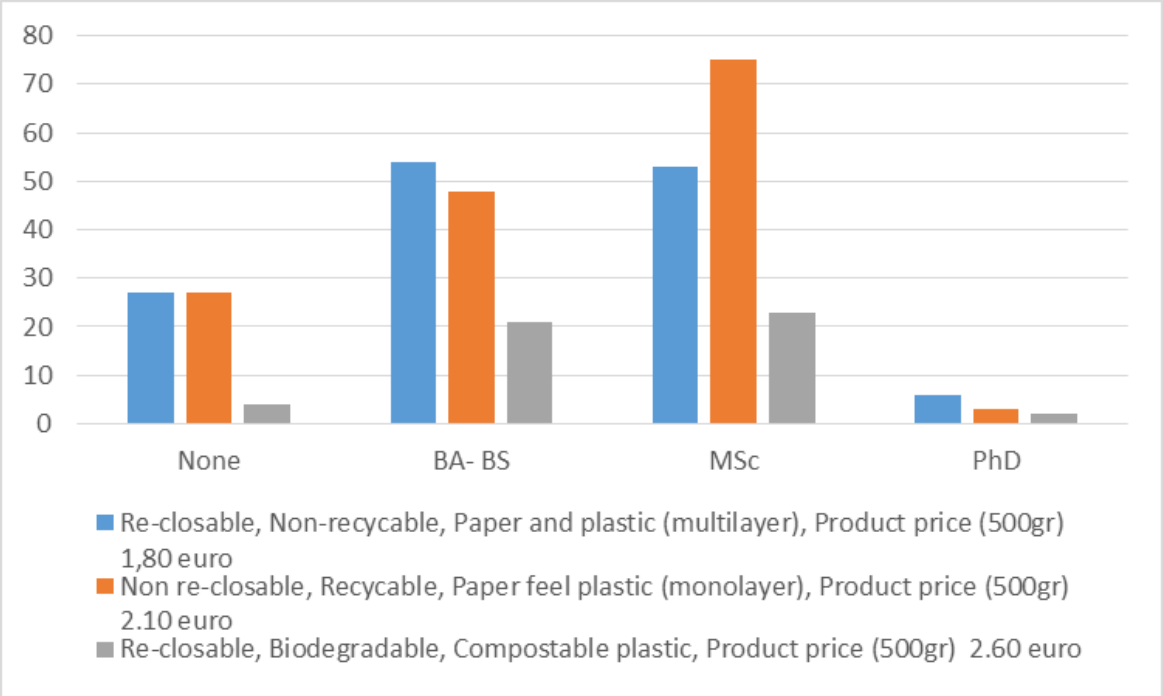

Figure B. 18: Distribution of responders in question "Which of the following product combination do you prefer the most with the following packaging attributes?", according to their education